



**BUREAU  
VERITAS**

# TEST REPORT

**LAB NO.** : (9315)128-0349  
**DATE** : May 18, 2015  
**PAGE** : 1 OF 8

**APPLICANT** : **KYSAN ELECTRONICS**  
820 CHARCOT AVENUE, SAN JOSE, CALIFORNIA 95131, USA

**CONTACT PERSON** : Tony Su

**DATE OF SUBMISSION** : May 08, 2015

**TEST PERIOD** : May 08, 2015 to May 18, 2015

**NO. OF WORKING DAYS** : 7

**SAMPLE DESCRIPTION** : Step Motor

Color: /

Style No.: 42BYG,57BYG, 85BYG, 86BYG, 110BYG,35BYG, 28BYG

P.O. No.: /

Country of Origin: /

Country of Destination: /

**MANUFACTURER** : /

## SUMMARY OF TEST RESULTS

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

RW

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BUREAU VERITAS CONSUMER PRODUCTS SERVICES (GUANGZHOU) CO., LTD

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NINA REN  
SECTION MANAGER

**REMARK**

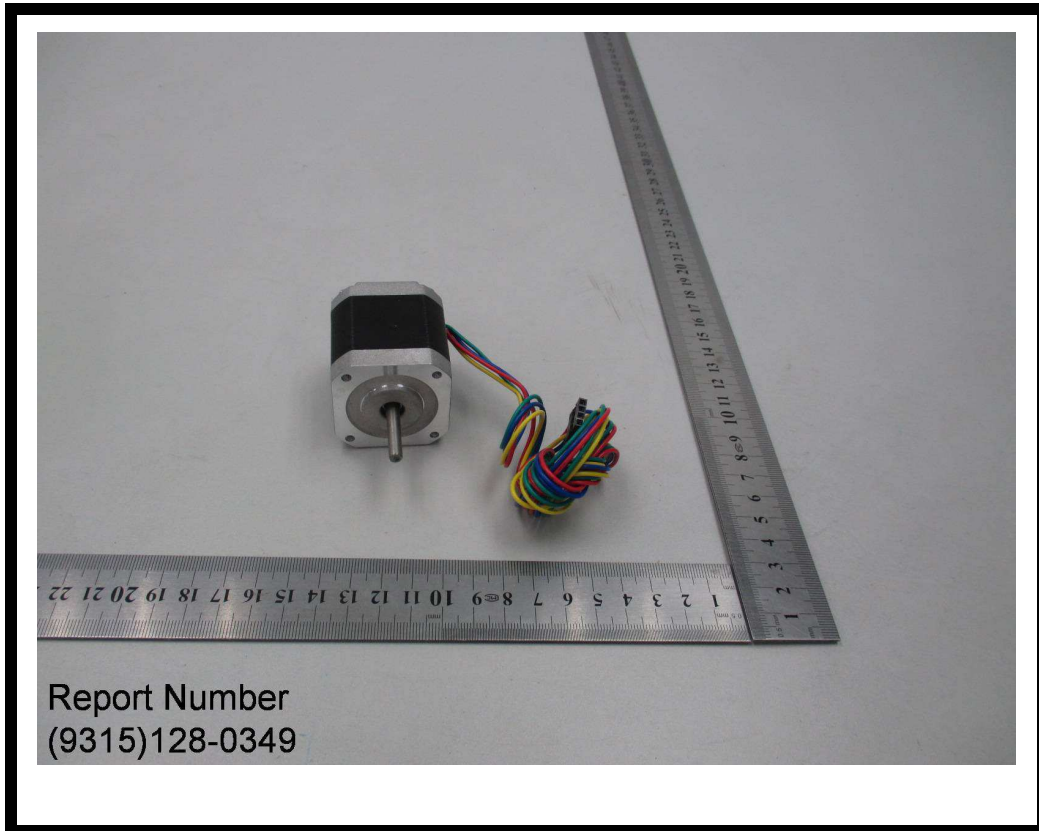
If there are questions or concerns on this report, please contact the following persons:

- |                     |                                    |
|---------------------|------------------------------------|
| a) GENERAL TEL:     | (86)755 83437287                   |
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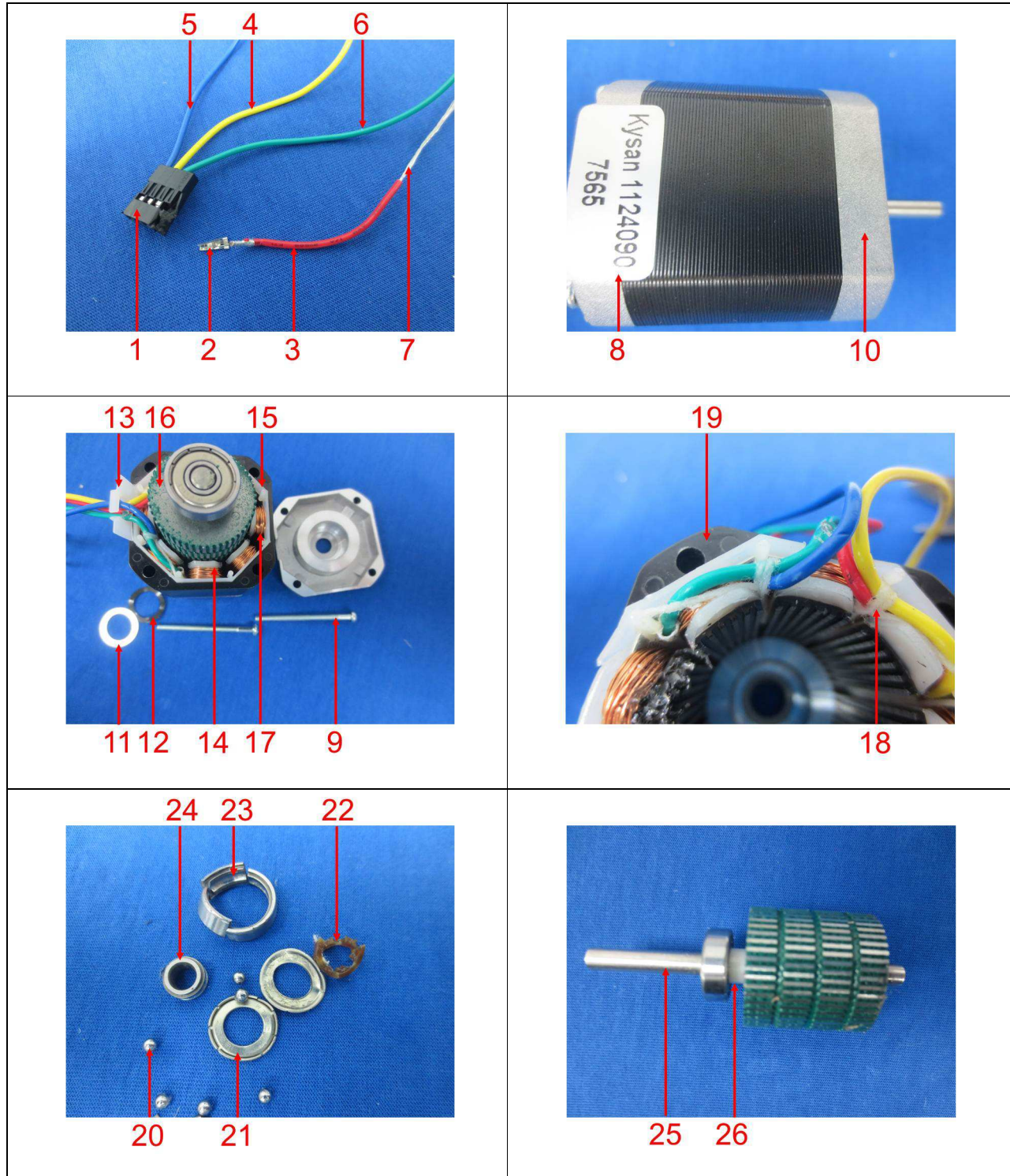


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Photo of the Submitted Sample



Photograph of test item(s)





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### TEST RESULT

**Compliance Test - European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)**

**Test Method** : See Appendix.

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
1	Black plastic	Female connector	-
2	Silvery plated coppery metal	Female connector	-
3	Black printed red soft plastic	Wire jacket	-
4	Black printed yellow soft plastic	Wire jacket	-
5	White printed blue soft plastic	Wire jacket	-
6	White printed green soft plastic	Wire jacket	-
7	Silvery plated coppery metal	Wire	-
8	Black/ printed silvery plastic with adhesive	Label	-
9	Metallic blue plated silvery metal	Screw	-
10	Silvery metal	Endbell	-
11	Silvery metal	Ring	-
12	Black coated silvery metal	Ring	-
13	translucent plastic	Clip	-
14	Translucent plastic	Coil holder	-
15	Translucent plastic	Plate	-
16	Silvery metal with green coating	Rotor	-
17	Coppery metal	Coil	-
18	White thread	Wire	-
19	Black plated silvery metal	Case	-
20	Silvery metal	Bead	-
21	Silvery metal	Cover, bearing	-
22	Dark brown plastic	Bead holder	-
23	Silvery metal	Case, bearing	-
24	Silvery metal	Ring, bearing	-
25	Silvery metal	Shaft	-
26	Translucent plastic	Ring	-
27	Silvery magnet	Rotor	-

**See Analytes and their corresponding Maximum Allowable Limit in Appendix**

Parameter	Result						Conclusion
	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	
<b>Unit</b>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
<b>Test Item(s)</b>	-	-	-	-	-	-	-
1	ND	ND	ND	ND	ND*	ND*	PASS
2	ND	ND	ND	ND	NA	NA	PASS
3	ND	ND	ND	ND	ND	ND	PASS
4	ND	ND	ND	ND	ND	ND	PASS
5	ND	ND	ND	ND	ND	ND	PASS
6	ND	ND	ND	ND	ND	ND	PASS
7	ND	ND	ND	ND	NA	NA	PASS
8	ND	ND	ND	ND	ND	ND	PASS
9	ND	ND	ND	Negative*	NA	NA	PASS
10	<500	ND	ND	ND	NA	NA	PASS



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Parameter	Result						Conclusion
	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item(s)	-	-	-	-	-	-	-
11	ND	ND	ND	Negative*	NA	NA	PASS
12	ND	ND	ND	Negative*	NA	NA	PASS
13	ND	ND	ND	ND	ND	ND	PASS
14	ND	ND	ND	ND	ND	ND	PASS
15	ND	ND	ND	ND	ND	ND	PASS
16	ND	ND	ND	Negative*	NA	NA	PASS
17	ND	ND	ND	ND	NA	NA	PASS
18	ND	ND	ND	ND	ND	ND	PASS
19	ND	ND	ND	Negative*	NA	NA	PASS
20	ND	ND	ND	Negative*	NA	NA	PASS
21	ND	ND	ND	ND	NA	NA	PASS
22	ND	ND	ND	ND	ND	ND	PASS
23	ND	ND	ND	Negative*	NA	NA	PASS
24	ND	ND	ND	Negative*	NA	NA	PASS
25	ND	ND	ND	Negative*	NA	NA	PASS
26	ND	ND	ND	ND	ND	ND	PASS
27	ND	ND	ND	ND	ND	ND	PASS

Note / Key :

ND = Not detected

NR = Not requested

% = percent

Detection Limit : See Appendix.

">" = Greater than

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

10000 mg/kg = 1 %

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 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.

END



**APPENDIX**

<b>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 ] :</b>						
<b>No.</b>	<b>Name of Analytes</b>	<b>Detection Limit (mg/kg)</b>				<b>Maximum Allowable Limit (mg/kg)</b>
		<b>X-ray fluorescence (XRF)<sup>[a]</sup></b>			<b>Wet Chemistry</b>	
		<b>Plastic</b>	<b>Metallic / glass / ceramic</b>	<b>Others</b>		
1	Lead (Pb)	100	200	200	10 <sup>[b]</sup>	1 000
2	Cadmium (Cd)	50	50	50	10 <sup>[b]</sup>	100
3	Mercury (Hg)	100	200	200	10 <sup>[c]</sup>	1 000
4	Chromium (Cr)	100	200	200	NA	NA
5	Chromium VI (Cr VI)	NA	NA	NA	3 <sup>[g, h]</sup> / 10 <sup>[d]</sup> / See <sup>[e, j]</sup>	1 000 / Negative <sup>[i]</sup>
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 <sup>[f]</sup>	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 <sup>[f]</sup>	Sum 1 000
<p>NA = Not applicable</p> <p><sup>[a]</sup> Test method with reference to International Standard IEC 62321-3-1: 2013.</p> <p><sup>[b]</sup> Test method with reference to International Standard IEC 62321-3-5: 2013.</p> <p><sup>[c]</sup> Test method with reference to International Standard IEC 62321-3-4: 2013.</p> <p><sup>[d]</sup> Polymers and Electronics - Test method with reference to European Standard EN 62321: 2009, Annex C.</p> <p><sup>[e]</sup> Metal - Test method with reference to European Standard EN 62321: 2009, Annex B<sup>[i]</sup>.</p> <p><sup>[f]</sup> Test method with reference to European Standard EN 62321: 2009, Annex A.</p> <p><sup>[g]</sup> Leather - Test method International Standard ISO 17075: 2007.</p> <p><sup>[h]</sup> Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075: 2007.</p> <p><sup>[i]</sup> 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).</p> <p><sup>[j]</sup></p>						



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**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)