



Test Report

Report No.:JLCR240223005

Date:Mar 22, 2024

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Radiolink Electronic Limited

3/F, Building 2, Fuguo Industrial Park, Kaifeng Road, Meilin, Shenzhen, Guangdong, China

The following sample(s) and information were submitted and identified by the applicant

Sample Name: Electronic Speed Controller
 XNO Report Number: JLCR240223005
 Model No.: CL9030
 Manufacturer: Radiolink Electronic Limited
 Manufacturer Address: 3/F, Building 2, Fuguo Industrial Park, Kaifeng Road, Meilin, Shenzhen, Guangdong, China

Trademark:



Sample Received Date: Feb 23, 2024
 Testing Period: Feb 23, 2024 to Mar 22, 2024
 Testing Requirements: Test as requested by client
 Test Method: Please refer to next page(s)
 Test Results: Please refer to next page(s)

Summary of test results:

Test Requested	Conclusion
RoHS Directive 2011/65/EU Annex II amending Directive (EU)2015/863 - Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs Content, Dibutyl phthalate (DBP), Benzylbutyl phthalate(BBP), Di-(2-ethylhexyl) phthalate (DEHP), Diisobutyl phthalate(DIBP) Content	PASS

Authorized signature



Kyle Kuang

Approved Signatory

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1. Test item description and Photo list

Sample No.	Description	Remark	Photograph
1	Yellow plastic (wire cover)		
2	Blue plastic (wire cover)		
3	Transparent plastic (contact head)		
4	Golden metal (thick wire)		
5	Silvery metal		
6	Red plastic (thick wire cover)		
7	Black plastic (thick wire cover)		
8	Black plastic (wire tip)		
9	Yellow plastic (wire tip)		
10	Golden metal		
11	Red plastic (thin wire cover)		
12	Black plastic (thin wire cover)		
13	Golden metal (thin wire)		
14	Yellow plastic (circuit board)		
15	Silvery metal (contact foot)		

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Sample No.	Description	Remark	Photograph
16	Silvery metal (switch)		
17	Black plastic (hard switch button)		
18	Silvery metal (switch spring)		
19	Silvery metal (switch base)		
20	Black plastic (soft switch button)		
21	Black metal (screws)		
22	Black plastic (switch bottom cover)		
23	Black plastic (switch box)		
24	Black plastic (main frame)		
25	Label sticker (body)		
26	Silvery metal (contact foot)		
27	Black plastic (body base)		
28	Black metal (main body)		
29	Silvery metal		
30	Black plastic (resistance shell)		

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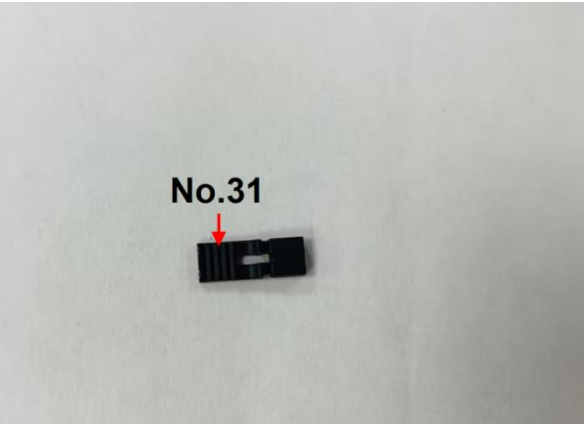


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Sample No.	Description	Remark	Photograph
31	Black plastic (Jumper cap)		



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2. Test Results

2.1 Screening test for the specified hazardous substances of RoHS for the selected materials of the submitted sample:

- Heavy Metal (Cadmium, Chromium, Mercury, Lead) Content Test
- Bromine Content Test

Test method: IEC 62321-3-1:2013, and Quantification analyzed by Energy Dispersive X-ray Fluorescence Spectrometers.

Sample No.	Total Cadmium	Total Lead	Total Mercury	Total Chromium	Total Bromine
1	BL	BL	BL	BL	BL
2	BL	BL	BL	BL	BL
3	BL	BL	BL	BL	BL
4	BL	BL	BL	BL	N.A.
5	BL	BL	BL	BL	N.A.
6	BL	BL	BL	BL	BL
7	BL	BL	BL	BL	BL
8	BL	BL	BL	BL	BL
9	BL	BL	BL	BL	BL
10	BL	BL	BL	BL	N.A.
11	BL	BL	BL	BL	BL
12	BL	BL	BL	BL	BL
13	BL	BL	BL	BL	N.A.
14	BL	BL	BL	BL	BL
15	BL	BL	BL	BL	N.A.
16	BL	BL	BL	BL	N.A.
17	BL	BL	BL	BL	BL
18	BL	BL	BL	BL	N.A.
19	BL	BL	BL	BL	N.A.
20	BL	BL	BL	BL	BL
21	BL	BL	BL	BL	N.A.
22	BL	BL	BL	BL	BL
23	BL	BL	BL	BL	BL
24	BL	BL	BL	BL	BL
25	BL	BL	BL	BL	BL
26	BL	BL	BL	BL	N.A.
27	BL	BL	BL	BL	BL
28	BL	BL	BL	BL	N.A.

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Sample No.	Total Cadmium	Total Lead	Total Mercury	Total Chromium	Total Bromine
29	BL	BL	BL	BL	N.A.
30	BL	BL	BL	BL	BL
31	BL	BL	BL	BL	BL

Remarks:

1. "OL" denotes "over limit"
2. "BL" denotes "below limit"
3. "N.A." denotes "Not Applicable"
4. "Inconclusive" denotes result is intermediate between "OL" and "BL"
5. "X" denotes the screening result was inconclusive(X) or over limit (OL), thus further confirmation test was conducted, results are listed in 2.2 and 2.3.
6. The results (No.17 - No.30) of this report have been taken from added tests part on Mar 15, 2024.
7. The results (No.31) of this report have been taken from added tests part on Mar 22, 2024.

XRF screening limits for different materials:

Materials	Concentration (mg/kg)				
	Cd	Cr	Pb	Hg	Br
Metals	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	N.A.
Polymers	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (300-3\sigma) < X$
Composite material	$BL \leq (50-3\sigma) < X < (150+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	$BL \leq (250-3\sigma) < X$

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2.2 Test for Heavy Metals(Lead, Cadmium, Mercury and Hexavalent Chromium)

Test method: IEC 62321-4:2013+A1:2017 &IEC 62321-5:2013 & IEC 62321-7-1:2015 & IEC 62321-7-2:2017.
analyzed by ICP-OES, UV-VIS.

Element	Total Cadmium	Total Lead	Total Mercury	Hexavalent Chromium ▼	Hexavalent Chromium
Limit	100	1000	1000	-	1000
Unit	mg/kg	mg/kg	mg/kg	µg/cm ²	mg/kg
MDL	5	5	5	0.10	5

Remarks:

- 1 mg/kg = 0.0001% =1ppm
- MDL= Method Detection Limit
- N.D. = Not Detected (< MDL)
- "-" = Not Regulated
- ▼ = a.concentration is greater than 0.13ug/cm²,The sample coating is considered to contain Cr(VI);
b.if Cr(VI)is N.D.(concentration less than 0.10ug/cm²).The coating is considered a non-Cr(VI) based coating;
c.The result between 0.10ug/cm² and 0.13ug/cm² is considered to be inconclusive -unavoidable coating variations may influence the determination;

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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2.3 Test for Flame retardants (PBBs&PBDEs)

Test method: IEC 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

	<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>
PBBs	Monobromobiphenyl	-	mg/kg	5
	Dibromobiphenyl	-	mg/kg	5
	Tribromobiphenyl	-	mg/kg	5
	Tetrabromobiphenyl	-	mg/kg	5
	Pentabromobiphenyl	-	mg/kg	5
	Hexabromobiphenyl	-	mg/kg	5
	Heptabromobiphenyl	-	mg/kg	5
	Octabromobiphenyl	-	mg/kg	5
	Nonabromobiphenyl	-	mg/kg	5
	Decabromobiphenyl	-	mg/kg	5
		Sum of PBBs	1000	mg/kg
PBDEs	Monobromodiphenyl Ether	-	mg/kg	5
	Dibromodiphenyl Ether	-	mg/kg	5
	Tribromodiphenyl Ether	-	mg/kg	5
	Tetrabromodiphenyl Ether	-	mg/kg	5
	Pentabromodiphenyl Ether	-	mg/kg	5
	Hexabromodiphenyl Ether	-	mg/kg	5
	Heptabromodiphenyl Ether	-	mg/kg	5
	Octabromodiphenyl Ether	-	mg/kg	5
	Nonabromodiphenyl Ether	-	mg/kg	5
	Decabromodiphenyl Ether	-	mg/kg	5
		Sum of PBDEs	1000	mg/kg

Remarks:

- 1 mg/kg = 0.0001% =1ppm
- MDL= Method Detection Limit
- N.D. = Not Detected (< MDL)
- "-" = Not Regulated

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2.4 Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP) Content

Test method: IEC 62321-8:2017, analyzed by GC-MS.

Element	Di-(2-ethylhexyl) phthalate (DEHP)	Benzylbutyl phthalate (BBP)	Dibutyl phthalate (DBP)	Diisobutyl phthalate(DIBP)
Limit	1000	1000	1000	1000
Unit	mg/kg	mg/kg	mg/kg	mg/kg
MDL	50	50	50	50
1	N.D.	N.D.	N.D.	N.D.
2	N.D.	N.D.	N.D.	N.D.
3	N.D.	N.D.	N.D.	N.D.
6	N.D.	N.D.	N.D.	N.D.
7	N.D.	N.D.	N.D.	N.D.
8	N.D.	N.D.	N.D.	N.D.
9	N.D.	N.D.	N.D.	N.D.
11	N.D.	N.D.	N.D.	N.D.
12	N.D.	N.D.	N.D.	N.D.
14	N.D.	N.D.	N.D.	N.D.
17	N.D.	N.D.	N.D.	N.D.
20	N.D.	N.D.	N.D.	N.D.
22	N.D.	N.D.	N.D.	N.D.
23	N.D.	N.D.	N.D.	N.D.
24	N.D.	N.D.	N.D.	N.D.
25	N.D.	N.D.	N.D.	N.D.
27	N.D.	N.D.	N.D.	N.D.
30	N.D.	N.D.	N.D.	N.D.
31	N.D.	N.D.	N.D.	N.D.

Remarks:

- 1 mg/kg = 0.0001% = 1ppm
- MDL= Method Detection Limit
- N.D. = Not Detected (< MDL)
- The results (No.17 - No.30) of this report have been taken from added tests part on Mar 15, 2024.
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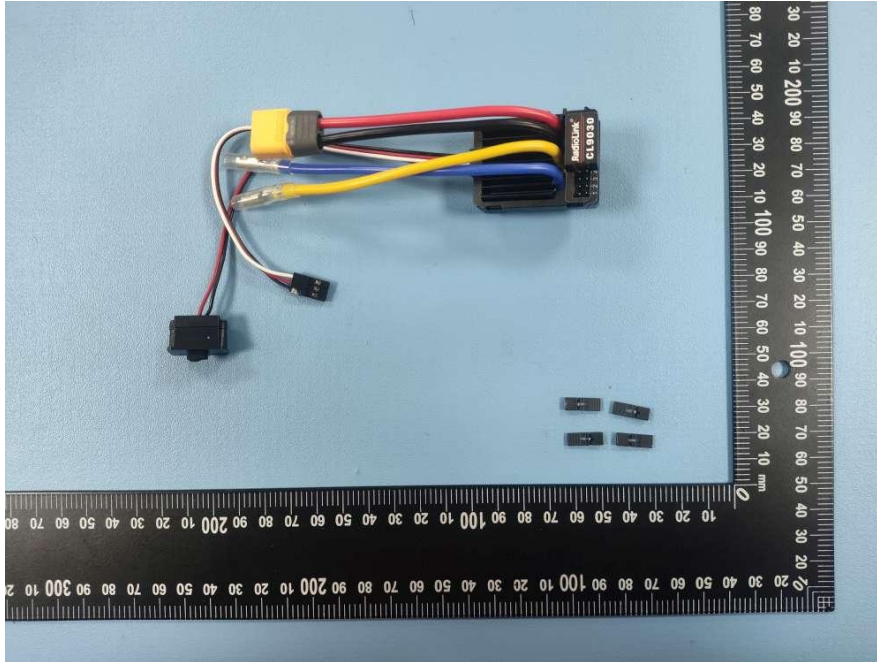
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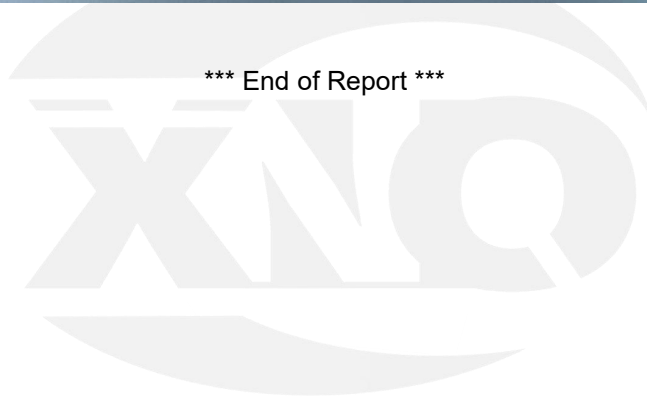
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Photo of the Sample:



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