

# Test Report

Report No.: GNB190604131EN

Date: Jul. 29, 2019

Page 1 of 5

The following information was/were submitted and identified by/on behalf of the client:

Applicant : YUEQING DAIER ELECTRON CO., LTD.  
Address : No.1636 Liuhuang Road, Xirendang Industrial Zone, Liushi Town, Yueqing City, Zhejiang Province, China  
Sample Name : Push Button switch  
Sample Model : GQ19, LAS1-19F, LAS3-16F, GQ-12, GQ-16, GQ22, GQ25, GQ30  
Sample Receive Date : Jun. 04, 2019  
Sample Testing Period : Jun. 04, 2019 - Jun. 06, 2019  
Test Result Summary:

As requested by the applicant, for details refer to attached page(s).

TEST SAMPLE(S)	TEST ITEM(S)	TEST REQUESTED	CONCLUSION(S)
1, 2, 3, 4, 5, 6	Pb, Cd, Hg and CrVI content	RoHS Directive 2011/65/EU and its amendment (EU) 2015/863	FAIL
7, 8, 9	Pb, Cd, Hg, CrVI, PBBs, PBDEs and Phthalates(DBP, BBP, DEHP, DIBP) content	RoHS Directive 2011/65/EU and its amendment (EU) 2015/863	PASS

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Authorized signature:

Lab Manager: Gavin Zhou



Jul. 29, 2019

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# Test Report

Report No.: GNB190604131EN

Date: Jul. 29, 2019

Page 2 of 5

Test Result(s):

Test Sample Description:

Material No.	Material Description
<u>1</u>	Silvery metal ring
<u>2</u>	Silvery metal ring
<u>3</u>	Silvery metal part
<u>4</u>	Silvery metal part
<u>5</u>	Silvery metal part
<u>6</u>	Silvery metal screw
<u>7</u>	Blue transparent plastic part
<u>8</u>	Transparent rubber part
<u>9</u>	Blue plastic ring

## RoHS(Pb, Cd, Hg, CrVI, PBBs, PBDEs and Phthalates(DBP, BBP, DEHP, DIBP) )

Test Method: Lead(Pb), Cadmium(Cd) –IEC 62321-5: 2013  
 Mercury(Hg) –IEC 62321-4: 2013  
 Chromium VI(CrVI): For Metal material –IEC 62321-7-1: 2015  
 For Polymer or Electronic material –IEC 62321-7-2: 2017  
 PBBs, PBDEs –IEC 62321-6: 2015  
 DBP, BBP, DEHP, DIBP –IEC 62321-8: 2017

Test item	Limit	Unit	RL	Result(s)		
				<u>01</u>	<u>02</u>	<u>03</u>
Lead(Pb)	1000	mg/kg	10	N.D.	21050*	151
Cadmium(Cd)	100	mg/kg	10	N.D.	35	N.D.
Mercury(Hg)	1000	mg/kg	10	N.D.	N.D.	N.D.
Chromium VI(CrVI)	--	µg/cm <sup>2</sup>	0.10	N.D.	N.D.	N.D.
<b>Conclusion(s)</b>				PASS	PASS	PASS

Test item	Limit	Unit	RL	Result(s)		
				<u>04</u>	<u>05</u>	<u>06</u>
Lead(Pb)	1000	mg/kg	10	26560*	22	N.D.
Cadmium(Cd)	100	mg/kg	10	20	<b>8695</b>	N.D.
Mercury(Hg)	1000	mg/kg	10	N.D.	N.D.	N.D.
Chromium VI(CrVI)	--	µg/cm <sup>2</sup>	0.10	N.D.	N.D.	N.D.
<b>Conclusion(s)</b>				PASS	<b>FAIL</b>	PASS

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# Test Report

Report No.: GNB190604131EN

Date: Jul. 29, 2019

Page 3 of 5

Test item(s)	Limit	Unit	RL	Result(s)		
				07	08	09
Lead(Pb)	1000	mg/kg	10	N.D.	14	N.D.
Cadmium(Cd)	100	mg/kg	10	N.D.	N.D.	N.D.
Mercury(Hg)	1000	mg/kg	10	N.D.	N.D.	N.D.
Chromium VI(CrVI)	1000	mg/kg	50	N.D.	N.D.	N.D.
Dibutyl phthalate(DBP)	1000	mg/kg	50	N.D.	N.D.	N.D.
Butyl benzyl phthalate(BBP)	1000	mg/kg	50	N.D.	N.D.	N.D.
Di-2-ethylhexyl phthalate(DEHP)	1000	mg/kg	50	N.D.	N.D.	N.D.
Di-iso-butyl phthalate(DIBP)	1000	mg/kg	50	N.D.	N.D.	N.D.
Monobromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Dibromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Tribromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Tetrabromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Pentabromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Hexabromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Heptabromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Octabromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Nonabromobiphenyls	--	mg/kg	5	N.D.	N.D.	N.D.
Decabromobiphenyl	--	mg/kg	5	N.D.	N.D.	N.D.
Group PBBs	1000	mg/kg	--	N.D.	N.D.	N.D.
Monobromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Dibromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Tribromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Tetrabromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Pentabromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Hexabromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Heptabromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Octabromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Nonabromodiphenyl ethers	--	mg/kg	5	N.D.	N.D.	N.D.
Decabromodiphenyl ether	--	mg/kg	5	N.D.	N.D.	N.D.
Group PBDEs	1000	mg/kg	--	N.D.	N.D.	N.D.
<b>Conclusion(s)</b>				PASS	PASS	PASS

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# Test Report

Report No.: GNB190604131EN

Date: Jul. 29, 2019

Page 4 of 5

- Notes:**
1. 1000mg/kg = 0.1%;
  2. RL = Reporting Limit;
  3. N.D. = Not detected (<RL);
  4. "\*" = Exemption item.

According to the declaration from the client, Lead(Pb) in No.2 and No.4 are exempted by EU RoHS Directive 2011/65/EU based on: Copper alloy containing up to 4% lead by weight.

5. According to IEC 62321-7-1: 2015, explanation of result on Cr(VI) for metal sample see below table.

Colorimetric result (Cr(VI) concentration)	Qualitative result
The sample solution is < the 0.10 ug/cm <sup>2</sup> equivalent comparison standard solution	The sample is negative for Cr(VI) – The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coat ng.
The sample solution is ≥ the 0.10 ug/cm <sup>2</sup> and ≤ the 0.13 ug/cm <sup>2</sup> equivalent comparison standard solutions	The result is considered to be inconclusive – Unavoidable coating variations may influence the determination. Recommendation: if addition samples are available, perform a total of 3 trials to increase sampling surface area. Use the averaged result of the 3 trials for the final determination.
The sample solution is > the 0.13 ug/cm <sup>2</sup> equivalent comparison standard solution	The sample is positive for Cr(VI) – The Cr(VI) concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

Negative = Absence of Cr(VI), Inconclusive = Maybe exist Cr(VI), Positive = Presence of Cr(VI).

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## Test Report

Report No.: GNB190604131EN

Date: Jul. 29, 2019

Page 5 of 5

### Sample Photo(s):



GIG authenticate the photo(s) on original report only

\*\*\*End of Report\*\*\*

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