

## Test Report

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Date :Feb. 27, 2023

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**Applicant:** Shenzhen Shuguan Electronic Technology Co.,Ltd.  
**Address:** 502, building 2, hehe science and TechnologyPark, No. 252, da'er village, dashuikeng community, Fucheng street, Longhua District, Shenzhen

The following sample was submitted and identified by/on behalf of the client as:

**Sample Name:** SIR/SGPD/SGPT/PD/PT/SL/PDA SERIES  
**Model No.:** SIR/SGPD/SGPT/PD/PT/SL/PDA SERIES  
**Sample Received Date:** 2023.02.22  
**Testing Period:** 2023.02.22—2023.02.27  
**Test Requested:** As specified by client, Split the sample and determine the Pb, Cd, Hg, Cr(VI), PBBs ,PBDEs, DBP, BBP, DEHP and DIBP content of the parts.  
**Test Method:**  
1. Sample Screening testing with reference to IEC 62321-3-1:2013  
2. Chemical Test Method  
a. Determination of Lead ,Cadmium by ICP-OES with reference to IEC 62321-5:2013  
b. Determination of Mercury by ICP-OES with reference to IEC 62321-4:2013+AMD1:2017  
c. Determination of Hexavalent Chromium by Colorimetric method using UV-Vis reference to IEC 62321-7-1:2015, IEC 62321-7-2:2017  
d. Determination of PBBs and PBDEs by GC-MS with reference to IEC 62321-6:2015  
e. Determination of DBP, BBP, DEHP and DIBP by GC-MS with reference to IEC 62321-8:2017

**Test Result(s):** Please refer to the following page(s).

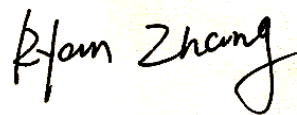
**Conclusion:** Base upon the performed tests by submitted sample, the test results comply with the limits as set by Directive (EU) 2015/863 - Amendment of EU RoHS Directive 2011/65/EU Annex II.

Checked by



Justin

Approved by



Ryan Zhang  
Technical Manager



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**Test Results:**

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS
1	Red electronic component	Pb	BL	---	Comply
		Cd	BL	---	Comply
		Hg	BL	---	Comply
		Cr(VI)	BL	---	Comply
		PBBs	IN	N.D.	Comply
		PBDEs	IN	N.D.	Comply
		DBP	---	N.D.	Comply
		BBP	---	N.D.	Comply
		DEHP	---	N.D.	Comply
		DIBP	---	N.D.	Comply
2	Silvery color metal pin	Pb	BL	---	Comply
		Cd	BL	---	Comply
		Hg	BL	---	Comply
		Cr(VI)	BL	---	Comply
		PBBs	---	---	NA
		PBDEs	---	---	NA
		DBP	---	---	NA
		BBP	---	---	NA
		DEHP	---	---	NA
		DIBP	---	---	NA

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**Remark:**

- (1) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr(VI).  
 (b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC/MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	NA	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(c) BL = Below Limit, OL = Over Limit, IN = Inconclusive, LOD = Limit of Detection, --- = Not Regulated, NA = Not Applicable.

(d) The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

- (2) (a) 1mg/kg = 1ppm = 0.0001%, N.D.= Not Detected (<MDL), --- = Not Conducted.

(b) Unit and Method Detection Limit (MDL) in chemical test

Test Items	Pb	Cd	Hg	Cr(VI)	PBBs	PBDEs	DBP	BBP	DEHP	DIBP
MDL(mg/kg)	10	10	10	*	100	100	100	100	100	100
Limit(mg/kg)	1000	100	1000	1000	1000	1000	1000	1000	1000	1000

\*MDL of Cr(VI) for polymer, composite sample is 10 mg/kg,

MDL of Cr(VI) for metal sample is 0.10 µg/cm<sup>2</sup>,

The limit is quoted from the Directive (EU) 2015/863 - Amendment of EU RoHS Directive 2011/65/EU Annex II.

(c) According to IEC 62321-7-1:2015, For metal samples,

- When the Cr (VI) concentration is > the 0,13 µg/cm<sup>2</sup>, the sample is positive for Cr(VI) and considered to contain Cr(VI).
- When the Cr (VI) concentration is N.D.(< the 0,10 µg/cm<sup>2</sup>), the sample is negative for Cr(VI) and considered a non-Cr(VI) based coating.
- When the Cr (VI) concentration is ≥ the 0,10 µg/cm<sup>2</sup> and ≤ the 0,13 µg/cm<sup>2</sup>, the result is considered to be inconclusive - Unavoidable coating variations may influence the determination.

Because the storage condition and production date of the sample are not known, the test results of

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the sample of hexavalent chromium can only represent the state of hexavalent chromium in the samples tested.



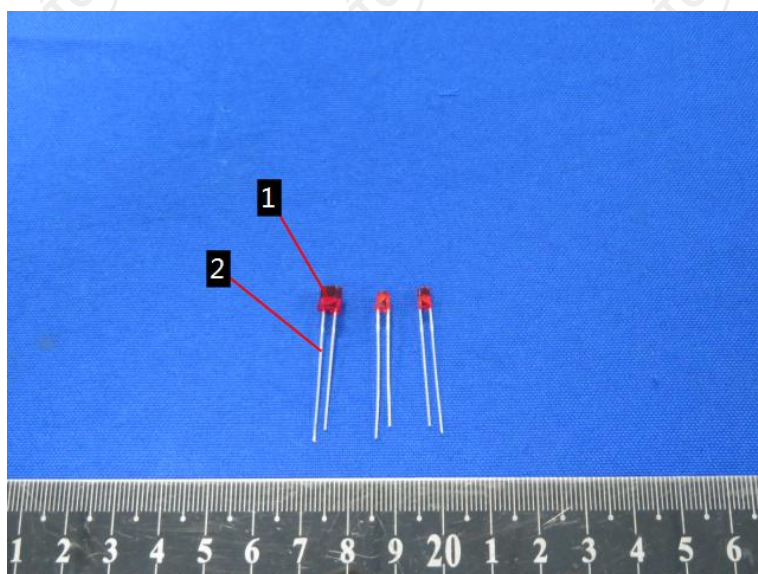
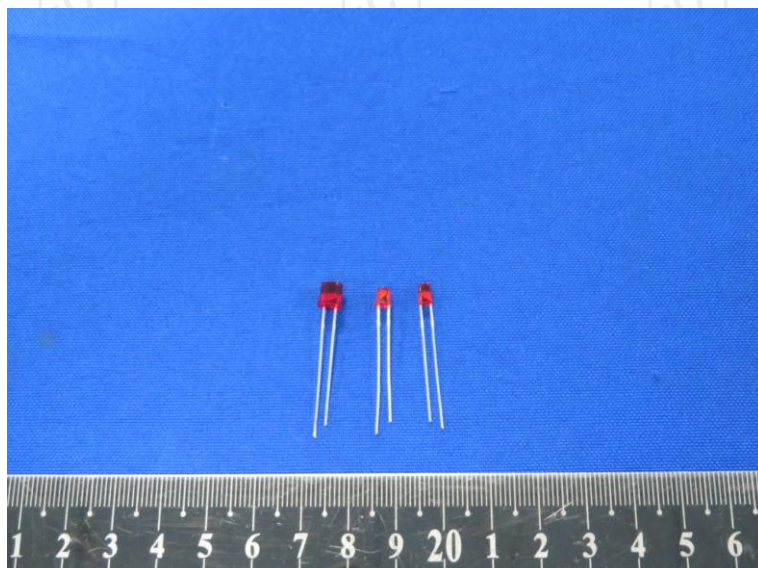
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### Photo(s) of the sample(s)



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

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