Test Report

Report No. : TCT230222C012 Date :Feb. 27, 2023 Page No.: 1 of 5

Applicant: **Shenzhen Shuguan Electronic Technology Co.,Ltd.**

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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

Test Report

Test Results:

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS
1	Transparent 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
3	Transparent 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

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≤(70-3σ)<X<(130+3σ)≤OL	BL≤(70-3σ)<X<(130+3σ) ≤OL	LOD<X<(150+3σ) ≤OL
Pb	BL≤(700-3σ)<X<(1300+3σ) ≤OL	BL≤(700-3σ)<X<(1300+3σ) ≤OL	BL≤(500-3σ)<X<(1500+3σ) ≤OL
Hg	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ) ≤OL
Br	BL≤(300-3σ)<X	NA	BL≤(250-3σ)<X
Cr	BL≤(700-3σ)<X	BL≤(700-3σ)<X	BL≤(500-3σ)<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/cm²,
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,

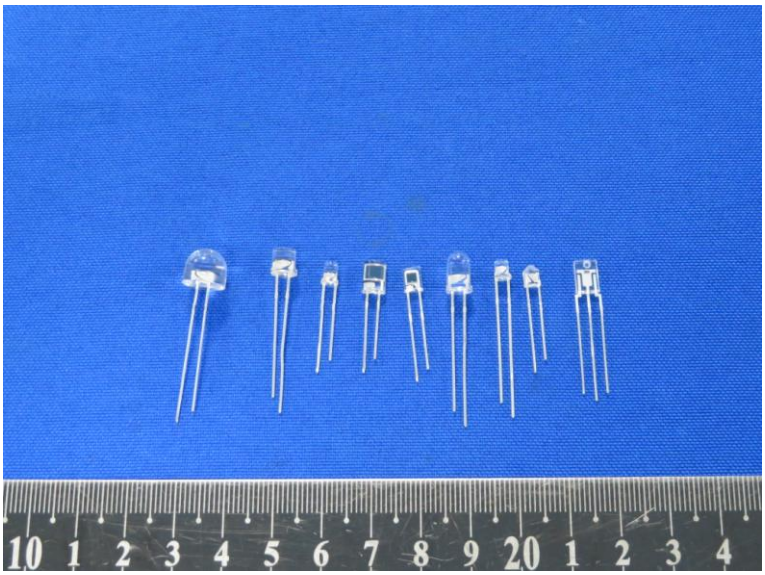
a. When the Cr (VI) concentration is > the 0,13 μg/cm^2, the sample is positive for Cr(VI) and considered to contain Cr(VI).

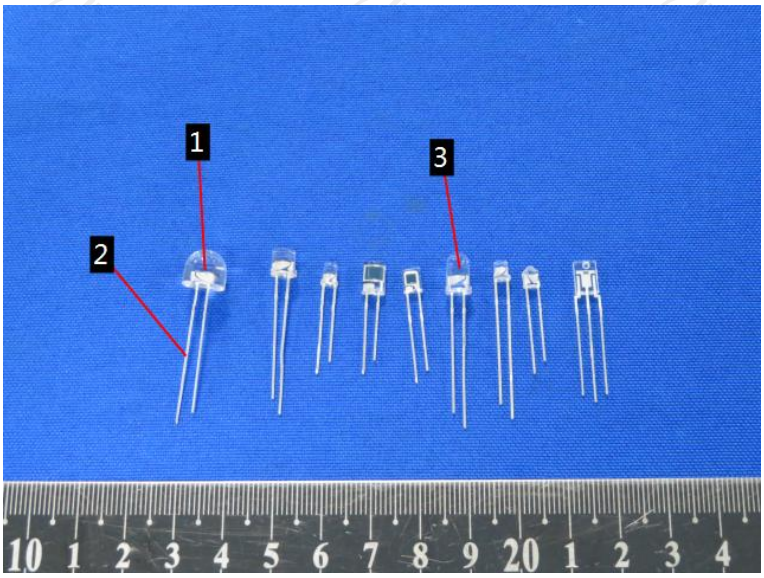
b. When the Cr (VI) concentration is N.D.(< the 0,10 μg/cm^2), the sample is negative for Cr(VI) and considered a non-Cr(VI) based coating.

c. When the Cr (VI) concentration is ≥ the 0,10 μg/cm^2 and ≤ the 0,13 μg/cm^2, 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

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

Photo(s) of the sample(s)





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

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