

Report No.: 18300RC10398101

Test Report


Client Name : Guangdong Supersmart Semiconductor Co.,Ltd
Address : No.9 Zhongnan South Road, Shangsha Community,
Chang'an Town, Dongguan City, Guangdong Province
Product Name : LED
Date : Aug. 25, 2021



Shenzhen Anbotek Compliance Laboratory Limited

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Applicant : Guangdong Supersmart Semiconductor Co.,Ltd**Address** : No.9 Zhongnan South Road, Shangsha Community, Chang'an Town,
Dongguan City, Guangdong Province**The submitted sample and sample information was/were submitted and identified by/on the behalf of the client****Sample Name** : LED**Test Model No.** : 1860 series**Manufacturer** : Guangdong Supersmart Semiconductor Co.,Ltd**Sample Received Date** : Aug. 16, 2021**Testing Period** : Aug. 16, 2021 to Aug. 23, 2021**Test Requested** : As specified by client, to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Diisobutyl phthalate (DIBP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP) in the selected material of submitted sample in accordance with the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 with effective from 22 July 2019.**Test Method:** Please refer to the following page(s).**Test Result(s):** Please refer to the following page(s).

Edited by



Reviewed by



Authorized Signatory



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Test Method:

A. XRF Screening Test

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC 62321-3-1:2013 Unit (mg/kg)		
	Polymers	Metals	Composite material
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	$BL \leq (300-3\sigma) < X$	N.A.	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Note:

-N.A. = Not Applicable

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol "X" marks the region where further investigation is necessary

-3σ= The reproducibility of analytical instruments

-LOD= Detection limit

B. Chemical Test

Test Item(s)	Test Method	Measured Equipment(s)	MDL	Limit
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013		2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017		2 mg/kg	1000 mg/kg
Hexavalent Chromium Cr(VI)	IEC 62321-7-1:2015	UV-VIS	0.10μg/cm ²	---
	IEC 62321-7-2:2017		8 mg/kg	1000 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015		5 mg/kg	1000 mg/kg
Phthalates (DIBP, DBP, BBP, DEHP)	IEC 62321-8:2017		50 mg/kg	1000 mg/kg

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Test Results:

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
1	Yellow LED	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
		DIBP	N.A.	N.D.	

Note:

- The screening results are only used for reference.
- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol "X" marks the region where further investigation is necessary

-LOD= Detection limit

-MDL = Method Detection Limit

-N.A. = Not Applicable

-N.D. = Not Detected (<MDL)

-/=Not tested

-mg/kg = ppm = parts per million

- µg/cm² = microgramme per square centimetre

- "----"=

a. -Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.10µg/cm².

b. -Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.13µg/cm².

c. The result between is 0.10µg/cm² and 0.13µg/cm² is considered to be inconclusive-unavoidable coating variations may influence the determination.

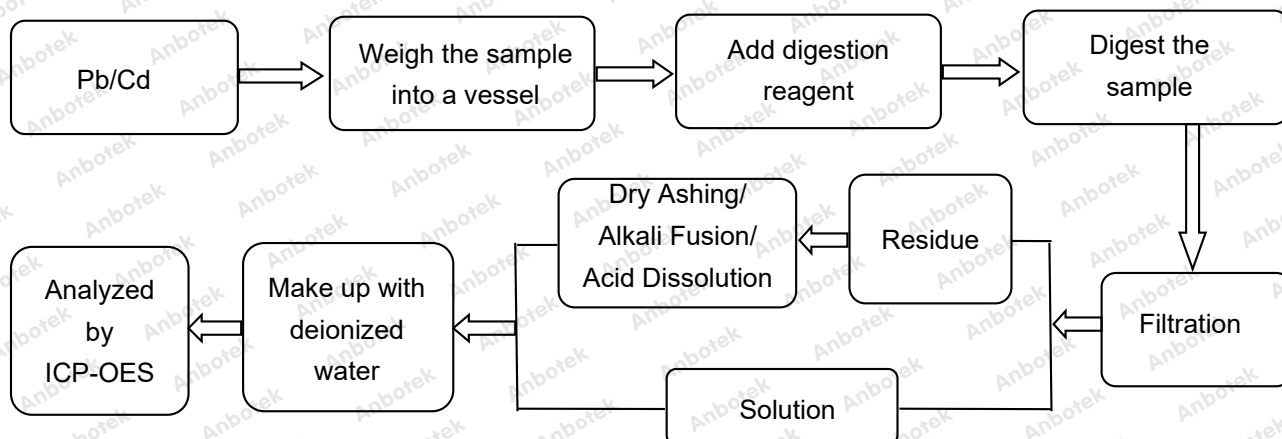
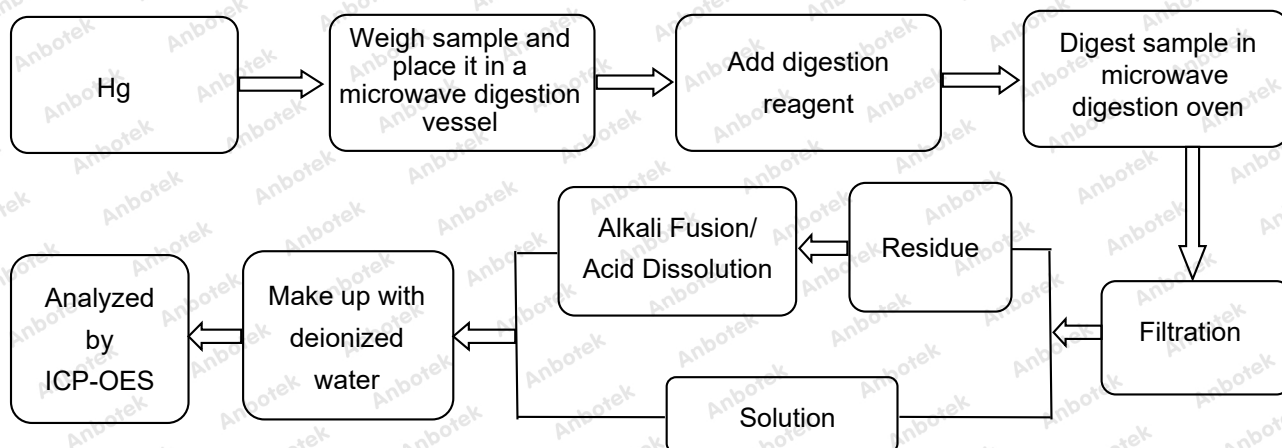


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Test Process:**◆ IEC 62321-5:2013****◆ IEC 62321-4:2013+AMD1:2017**

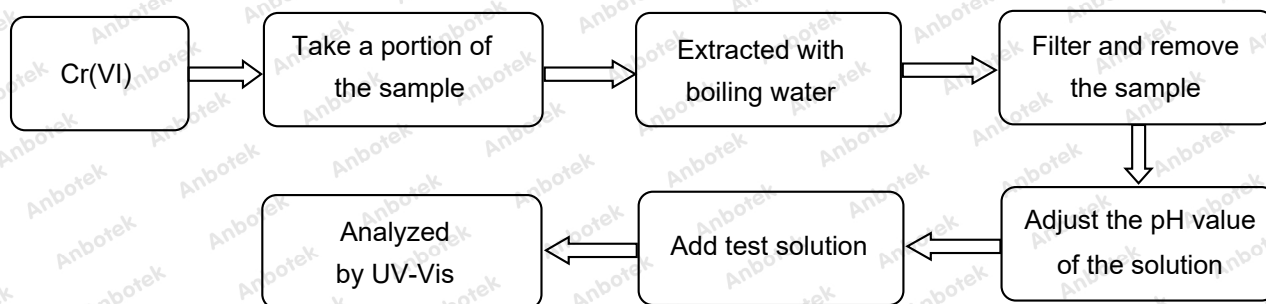
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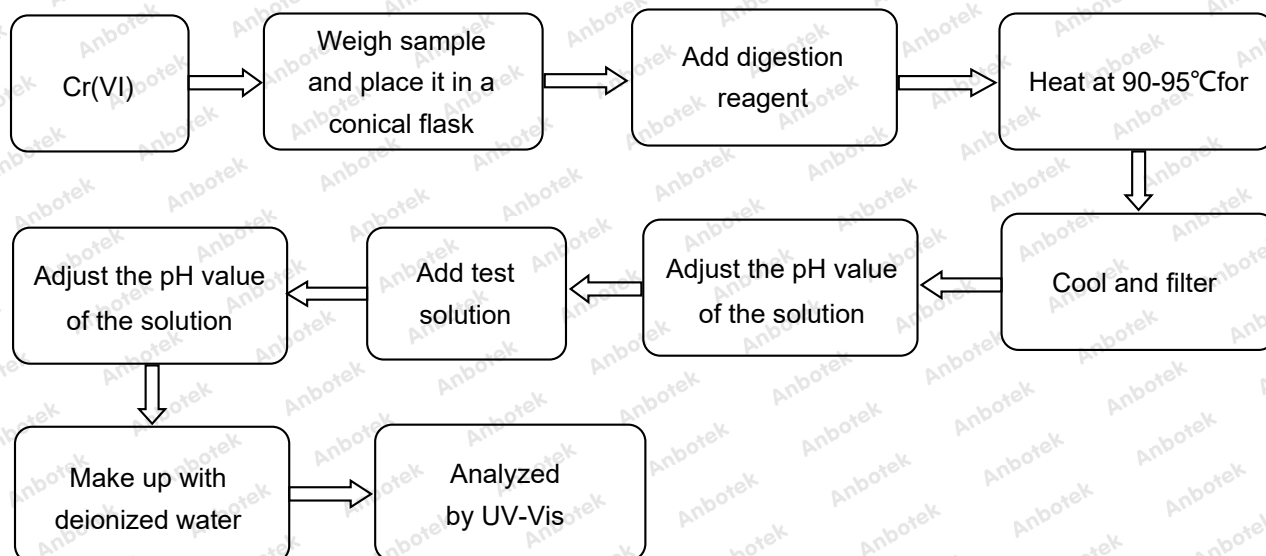
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◆ IEC 62321-7-1:2015



◆ IEC 62321-7-2:2017

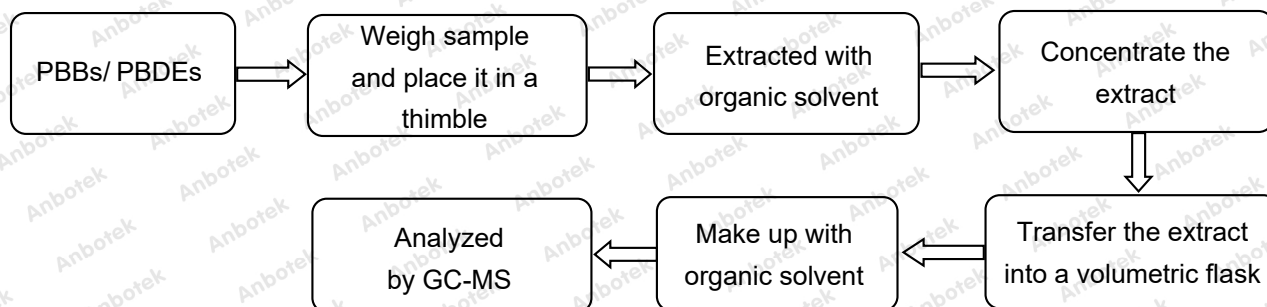
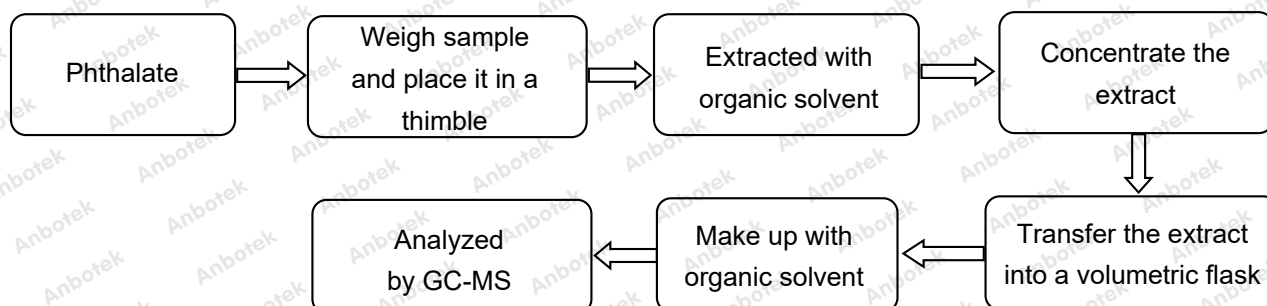


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◆ IEC 62321-6:2015**◆ IEC 62321-8:2017**

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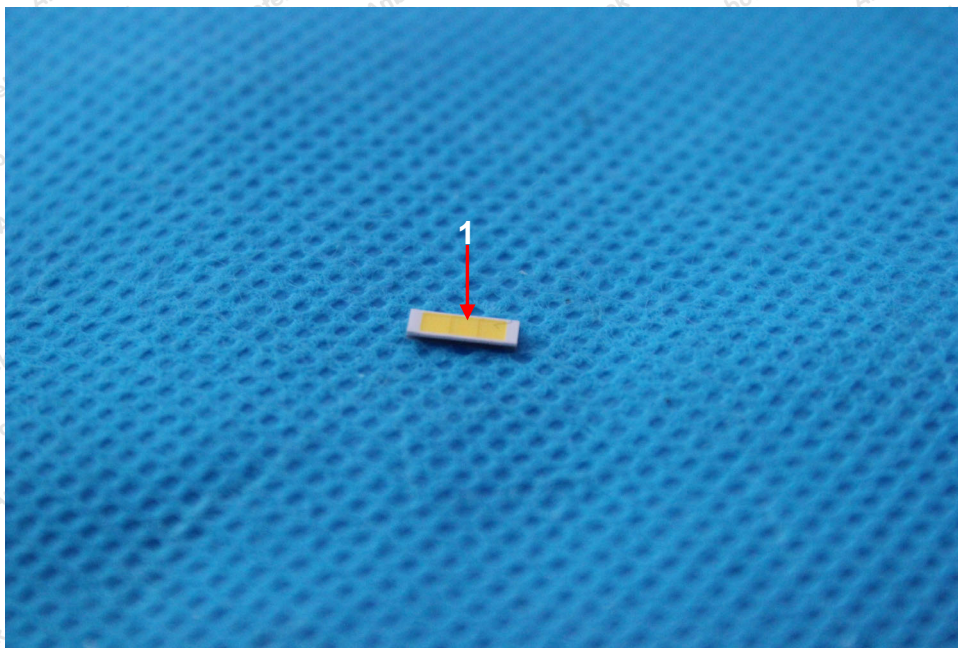
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Photograph of Sample



Photo(s) of the tested component(s)



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

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AB-RHS-03-a

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