




# RoHS Test Report

<b>Applicant name:</b>	Zhongshan Guangsheng Semiconductor Technology Co., Ltd.
<b>Applicant address:</b>	Floor 2-3, Building 2, Qifang Industrial Park, Pinghe Road, Tongyi Industrial district, Guzhen Town, Zhongshan City, China

## Sample information:

<b>Sample Name:</b>	Flip Chip COB Light Source
<b>Sample Model:</b>	COB
<b>Trade mark :</b>	
<b>Manufacturer:</b>	Zhongshan Guangsheng Semiconductor Technology Co., Ltd. Floor 2-3, Building 2, Qifang Industrial Park, Pinghe Road, Tongyi Industrial district, Guzhen Town, Zhongshan City, China
<b>Sample Received Date:</b>	Aug.12,2022
<b>Testing Period:</b>	Aug.12,2022~Aug.18,2022

## Test Requested

As specified by client, to determine the Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, DEHP, BBP, DBP & DIBP content in the submitted sample compliance with RoHS directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102.

## Test Method:

Tested Item(s)	Test Method	Measured Equipment(s)	MDL
Lead(Pb)	IEC 62321-5:2013	ICP-OES	2mg/kg
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES	2mg/kg
Mercury(Hg)	IEC 62321-4:2013+A1:2017	ICP-OES	2mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321-7-1:2015 IEC 62321-7-2:2017	UV-VIS	2mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	5mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	5mg/kg
Di-(2-ethylhexyl) phthalate(DEHP)	IEC 62321-8:2017	GC-MS	50mg/kg
Benzylbutyl phthalate(BBP)	IEC 62321-8:2017	GC-MS	50mg/kg
Dibutyl phthalate (DBP)	IEC 62321-8:2017	GC-MS	50mg/kg
Diisobutyl phthalate(DIBP)	IEC 62321-8:2017	GC-MS	50mg/kg

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

Test by: Heber He

Inspected by: Mary 2022

Approved by: Kevin Yang  
Technical Manager

Date : Aug.18,2022





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## Test Result(1):

**Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content**

**RoHS Directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102.**

Tested Item(s)	Content	Limit	MDL
Lead(Pb)	N.D.	1000	2
Cadmium(Cd)	N.D.	100	2
Mercury(Hg)	N.D.	1000	2
Hexavalent Chromium(Cr(VI))	N.D.	1000	2
<b>Polybrominated Biphenyls (PBBs)</b>			
Monobromobiphenyl	N.D.	-	5
Dibromobiphenyl	N.D.	-	5
Trbromobiphenyl	N.D.	-	5
Tetrabromobiphenyl	N.D.	-	5
Pentbromobiphenyl	N.D.	-	5
Hexabromobiphenyl	N.D.	-	5
Heptabromobiphenyl	N.D.	-	5
Octabromobiphenyl	N.D.	-	5
Nonabromobiphenyl	N.D.	-	5
Decabromobiphenyl	N.D.	-	5
Sum of PBBs	N.D.	1000	-
<b>Polybrominated Diphenyl Ethers(PBDEs)</b>			
Monobromodiphenyl ether	N.D.	-	5
Dibromodiphenyl ether	N.D.	-	5
Tribromodiphenyl ether	N.D.	-	5
Tetrabromodiphenyl ether	N.D.	-	5
Pentabromodiphenyl ether	N.D.	-	5
Hexabromodiphenyl ether	N.D.	-	5
Heptabromodiphenyl ether	N.D.	-	5
Octabromodiphenyl ether	N.D.	-	5
Nonabromodiphenyl ether	N.D.	-	5
Decabromodiphenyl ether	N.D.	-	5
Sum of PBDES	N.D.	1000	-



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## Test Result(2):

**Di-(2-ethylhexyl) phthalate, Benzylbutyl phthalate, Dibutyl phthalate and Diisobutyl phthalate RoHS Directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102.**

Tested Item(s)	Content	Limit	MDL
Di-(2-ethylhexyl) phthalate(DEHP)	N.D.	1000	50
Benzylbutyl phthalate(BBP)	N.D.	1000	50
Dibutyl phthalate (DBP)	N.D.	1000	50
Diisobutyl phthalate(DIBP)	N.D.	1000	50

Note:

MDL = Method Detection Limit

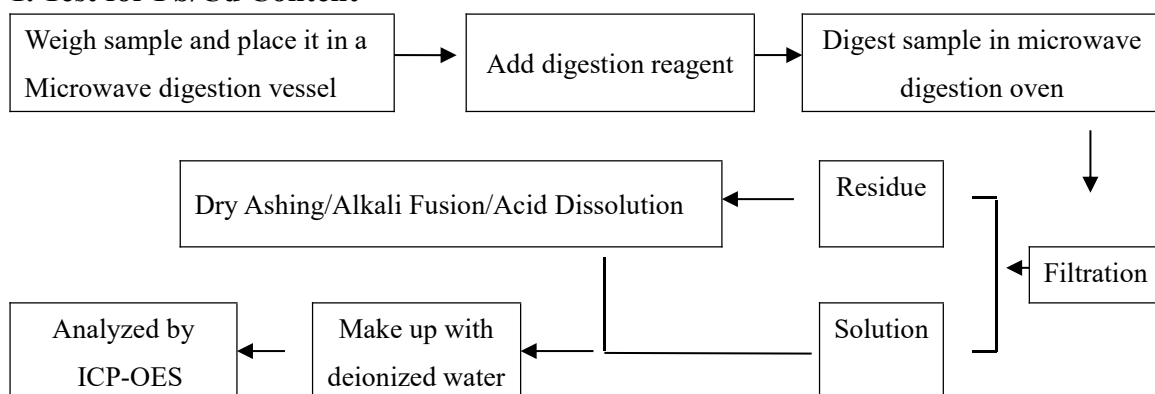
N.D. =Not Detected(<MDL)

mg/kg = ppm =parts per million

“-”=Not specified

## Test process

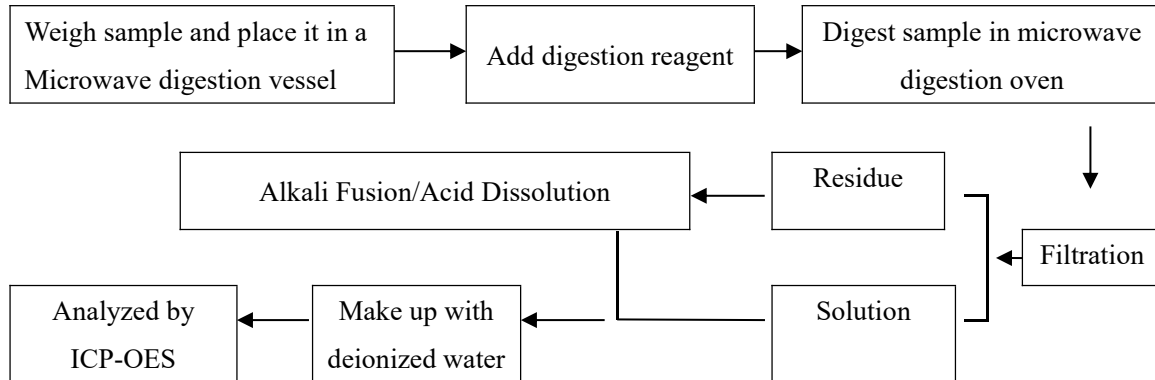
### 1. Test for Pb/Cd Content



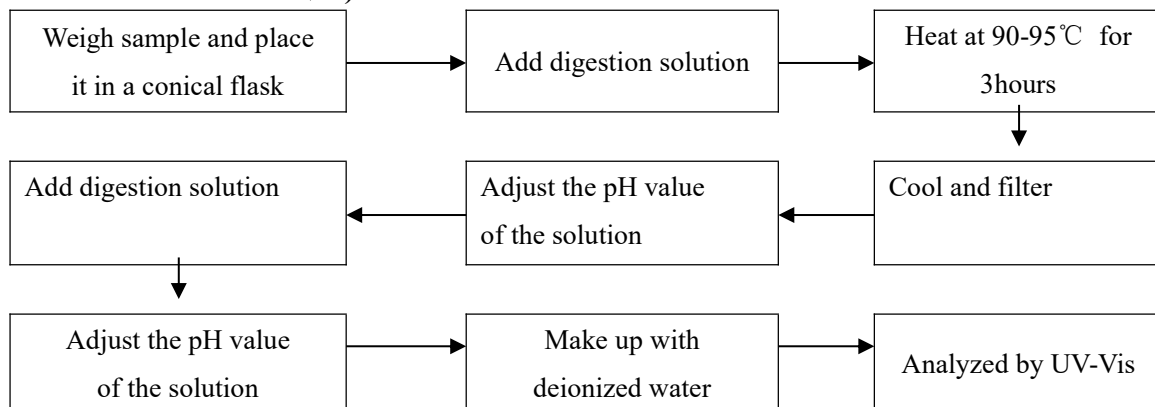


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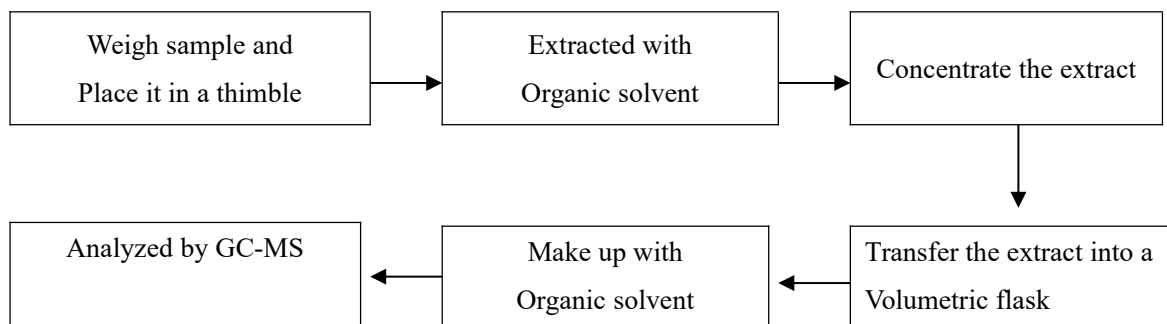
## 2. Test for Hg Content



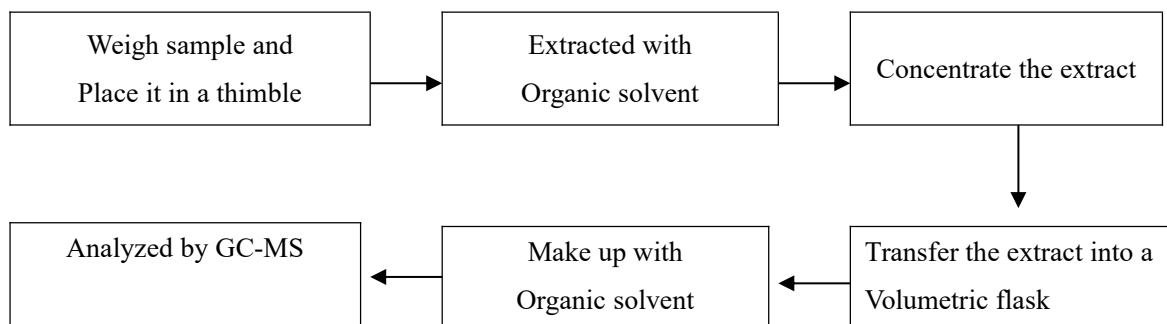
## 3. Test for Chromium (VI) Content



## 4. Test for PBBs/PBDEs Content



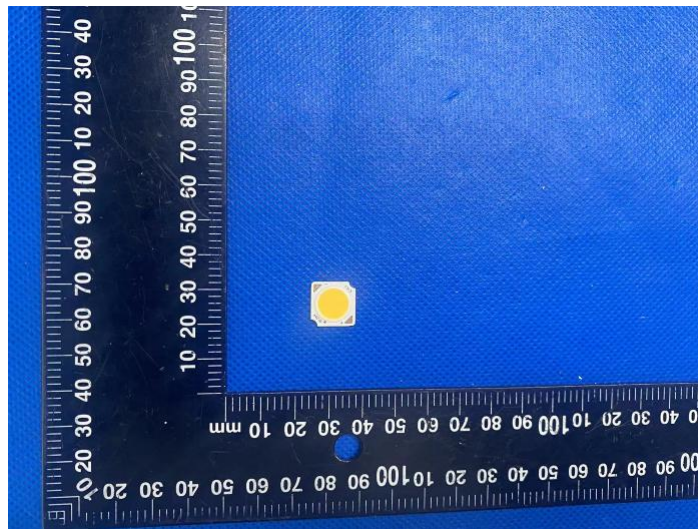
## 5. Phthalates Content





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Photo(s) of the sample(s)



\*\*\* End of report \*\*\*

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