




# 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>	 光圣半导体科技
<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>	Jul.26,2021
<b>Testing Period:</b>	Jul.26,2021~Jul.30,2021

## 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: James Huang

Inspected by: Robert Chen

Approved by: Kevin Yang  
Technical Manager

Date : Jul.30,2021





# RoHS Test Report

## 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
Pentabromobiphenyl	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	-



# RoHS Test Report

## 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

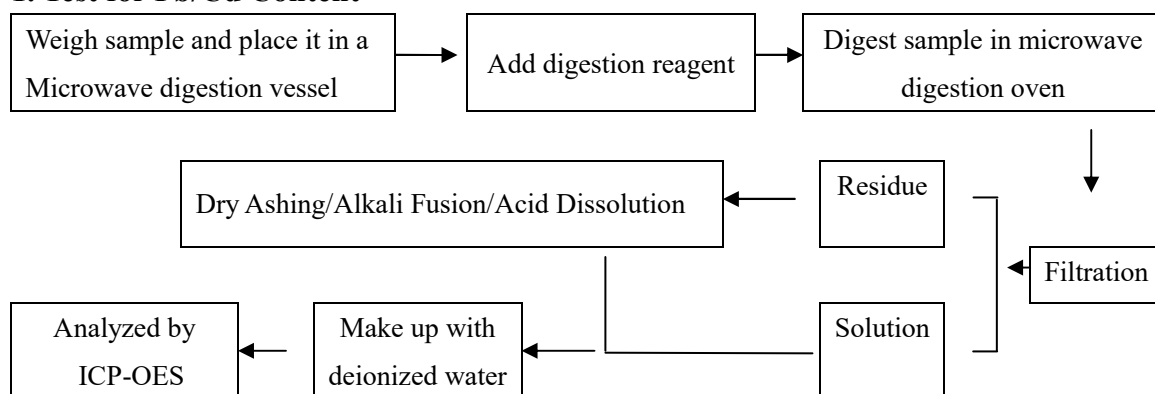
N.D. =Not Detected(<MDL)

mg/kg = ppm =parts per million

“-”=Not specified

## Test process

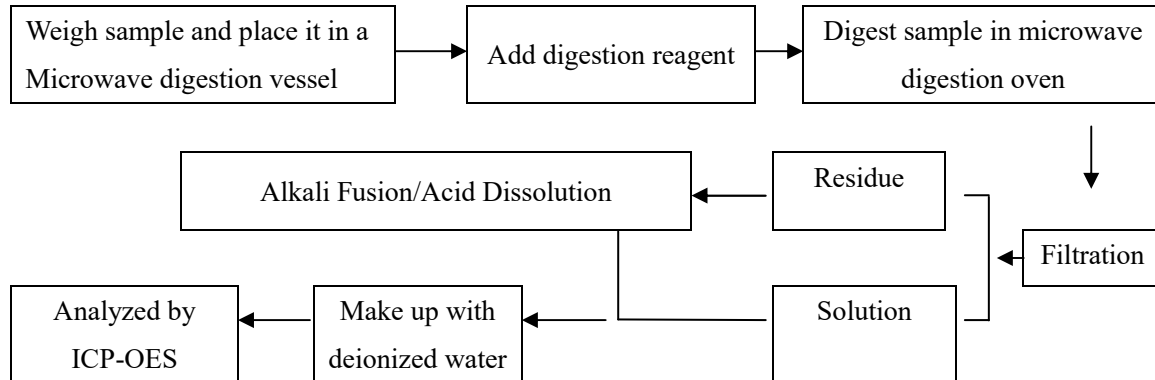
### 1. Test for Pb/Cd Content



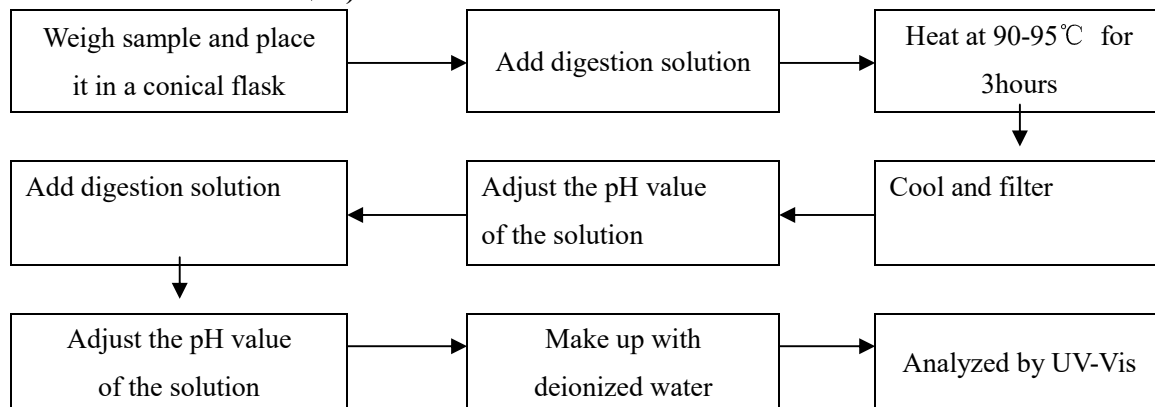


# RoHS Test Report

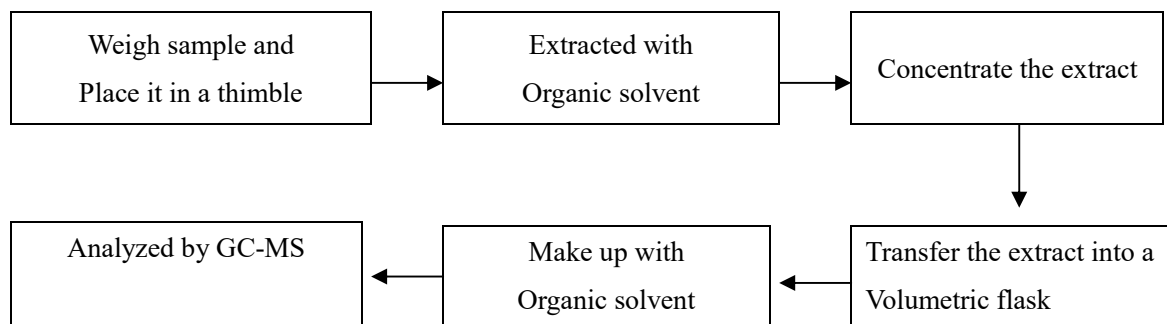
## 2. Test for Hg Content



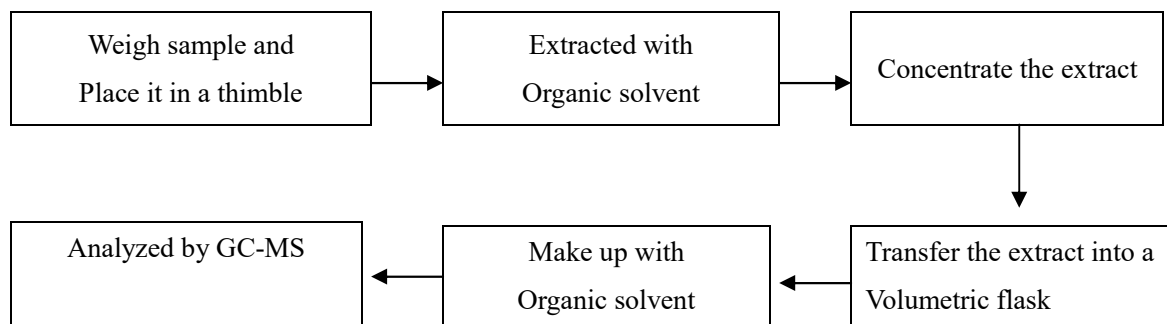
## 3. Test for Chromium (VI) Content



## 4. Test for PBBs/PBDEs Content



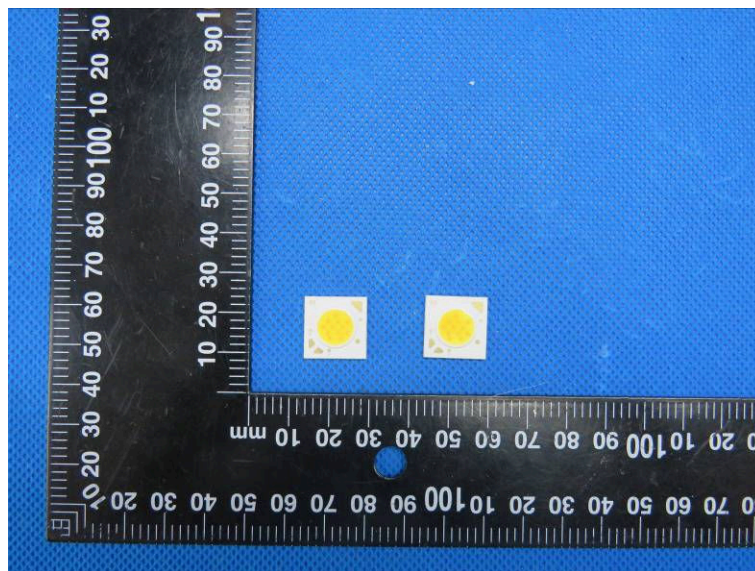
## 5. Phthalates Content





# RoHS Test Report

Photo(s) of the sample(s)



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

This report is considered invalidated without the Special Seal for Inspection of the HTT. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of HTT, this test report shall not be copied except in full and published as advertisement.