

# Test Report

Report No. A2180098414102001ER1  
A2180098414102001ER1

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Applicant 华润微电子(重庆)有限公司  
CHINA RESOURCES MICROELECTRONICS (CHONGQING) LIMITED  
重庆市沙坪坝区西永大道25号

Address NO.25,XI YONG AVE.SHA PING BA DISTRICT,CHONG QING,CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

样品名称 晶圆  
Sample Name wafer

样品接收日期 2018.06.19  
Sample Received Date Jun. 19, 2018

样品检测日期 2018.06.19-2018.06.22  
Testing Period Jun. 19, 2018 to Jun. 22, 2018

Test Requested 根据客户要求, 对所提交样品中的铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP), 氟(F), 氯(Cl), 溴(Br), 碘(I)进行测试。  
As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I) in the submitted sample(s).

Test Method/Test Result(s) / 请参见下页。  
Please refer to the following page(s).

主 检 张小琴  
Tested by

批 准 郑晴涛  
Approved by 郑晴涛  
技术经理 Technical Manager

审 核  
Reviewed by

日 期  
Date 2018.06.27

No. R101223558

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## Conclusion

Tested Sample	According to standard/directive	Result
提交样品 Submitted Sample	欧盟RoHS指令2011/65/EU及其修订指令(EU) 2015/863 RoHS Directive 2011/65/EU with amendment (EU) 2015/863	符合 Pass

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符合表示检测结果满足欧盟RoHS指令2011/65/EU及其修订指令(EU) 2015/863要求的限值。  
Pass means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.

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## Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead(Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium(Cr(VI))	IEC 62321-7-2: 2017和/或IEC 62321-5: 2013 测试总铬含量 IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
多溴联苯 Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
氟 Fluorine (F)	参考EN 14582: 2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	参考EN 14582: 2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	参考EN 14582: 2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	参考EN 14582: 2016 Refer to EN 14582:2016	IC

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**Test Result(s)**

Tested Item(s)	Result	MDL	Limit
铅 Lead(Pb)	N.D.	2 mg/kg	1000 mg/kg
镉 Cadmium(Cd)	N.D.	2 mg/kg	100 mg/kg
汞 Mercury(Hg)	N.D.	2 mg/kg	1000 mg/kg
六价铬 Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg	1000 mg/kg

Tested Item(s)	Result	MDL	Limit
<b>Polybrominated Biphenyls(PBBs)</b>			
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg	1000 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg	
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg	
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg	
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg	
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg	
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg	
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg	
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg	
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg	

Tested Item(s)	Result	MDL	Limit
<b>Polybrominated Diphenyl Ethers (PBDEs)</b>			
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg	1000 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg	
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg	
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg	
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg	
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg	
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg	
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg	
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg	
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg	

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Test Result(s)

Tested Item(s)	Result	MDL	Limit
<b>Phthalates (DBP, BBP, DEHP, DIBP)</b>			
邻苯二甲酸二丁酯 Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg	1000 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg	1000 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg	1000 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 mg/kg

Tested Item(s)	Result	MDL
氟 Fluorine(F)	N.D.	10 mg/kg
氯 Chlorine(Cl)	N.D.	10 mg/kg
溴 Bromine(Br)	N.D.	10 mg/kg
碘 Iodine(I)	N.D.	10 mg/kg

Tested Sample/Part Description / 晶片 (整体测试)  
Wafer(Tested as a whole)

的含量  
-N.D. = 未检出 (小于方法检出限)  
-mg/kg = ppm = 百万分之一  
-1000 mg/kg = 0.1%

**Remark:** -The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.  
-The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology. The result(s) shown on this report may be different from the content of any homogeneous material.

-MDL = Method Detection Limit  
-N.D. = Not Detected (<MDL)  
-mg/kg = ppm = parts per million  
-1000 mg/kg = 0.1%

释: 本 替换原 A2180098414102001E, 自本 签发 日起, 原 A2180098414102001E 作废

**Note:** This testing report displaces the original report of No.A2180098414102001E and the original one No.A2180098414102001E was invalid since the date of this testing report released.

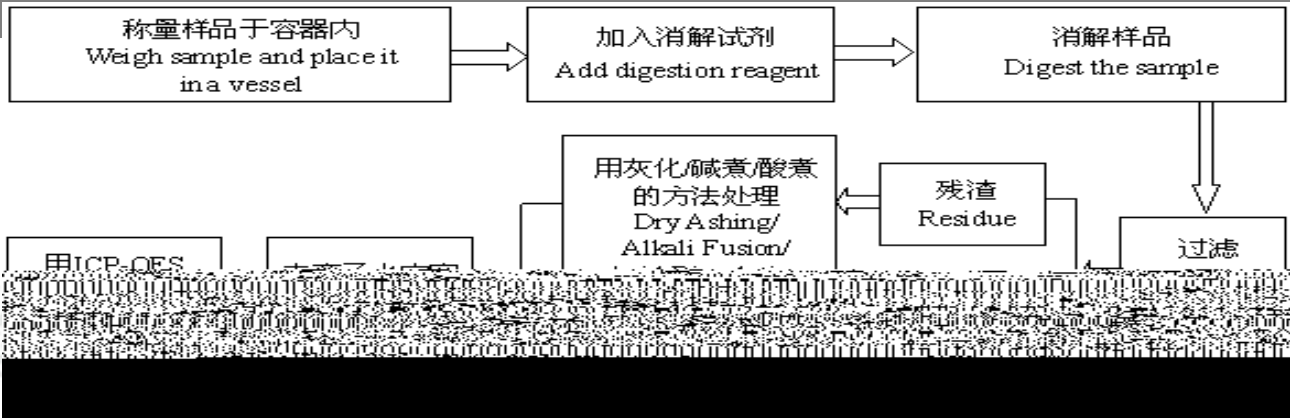
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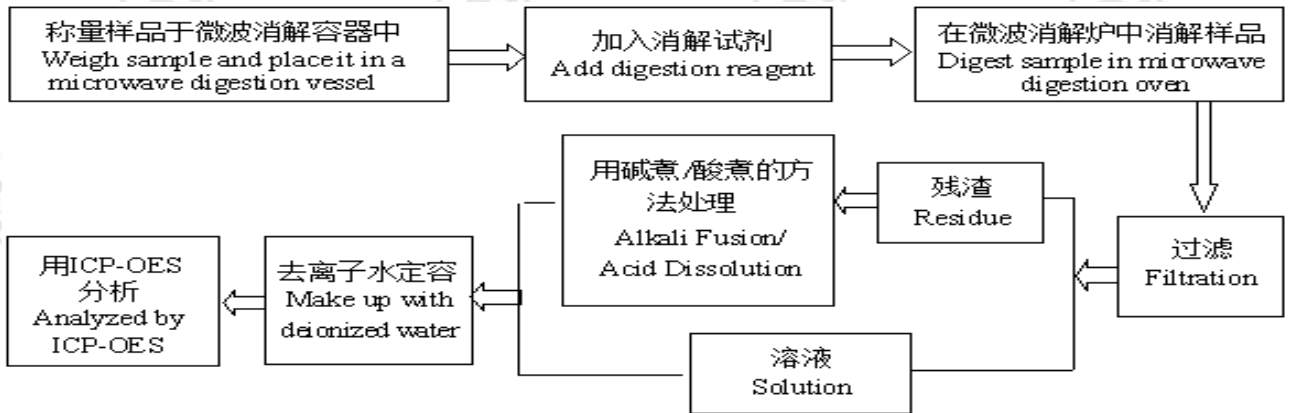
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## 流程 Test Process

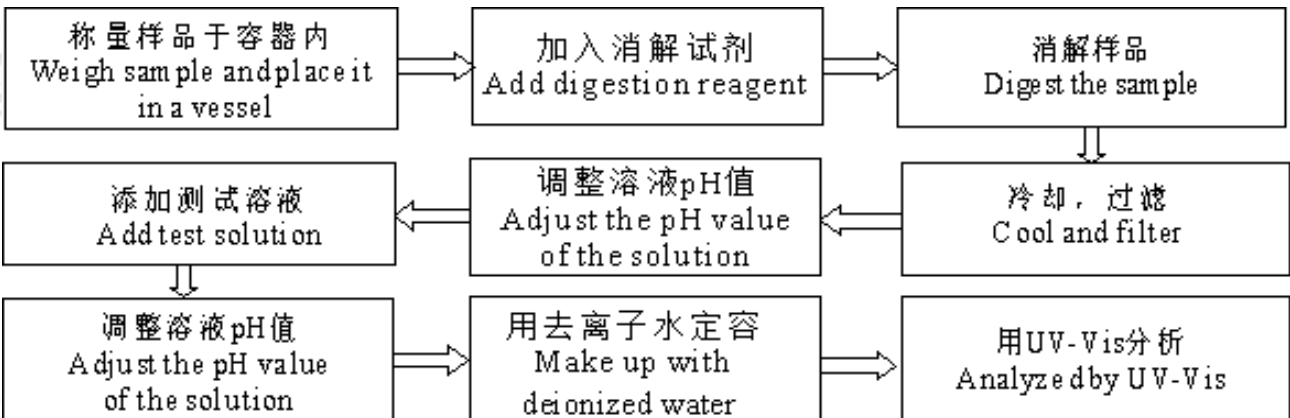
1. (Pb), (Cd), 铬(Cr)  
Lead(Pb), Cadmium(Cd), Chromium(Cr)



2. (Hg)  
Mercury(Hg)



3. 六价铬(Cr(VI))  
Hexavalent Chromium(Cr(VI))



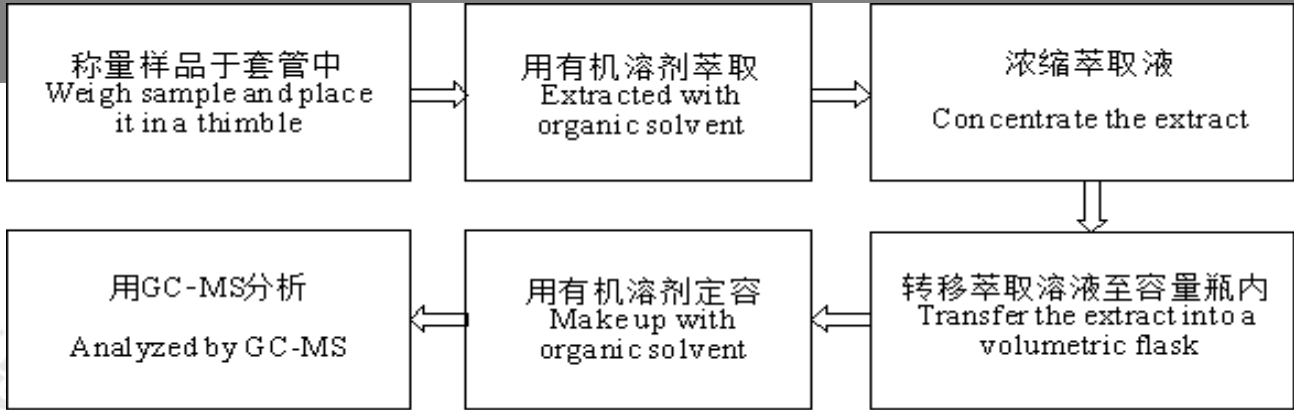
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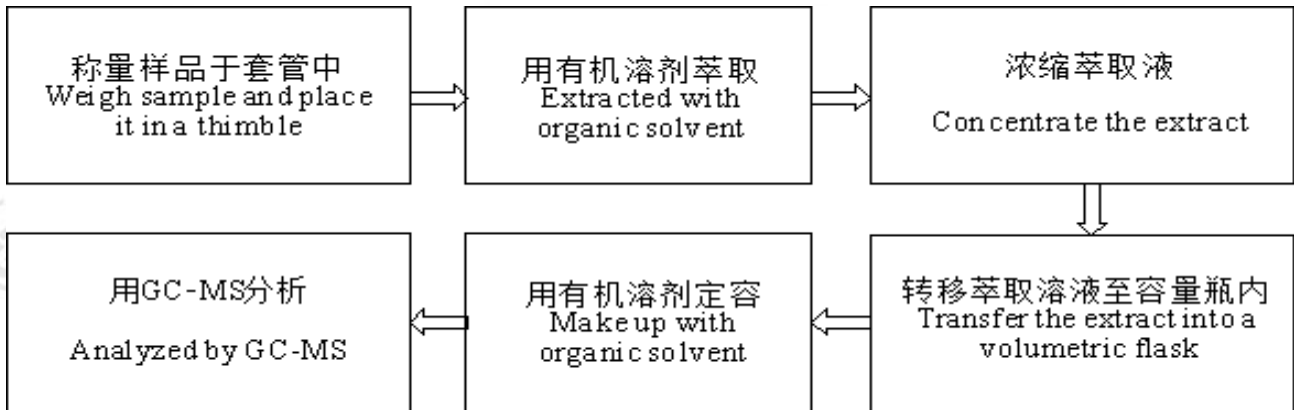
4. (PBBs) (PBDEs)

**Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)**



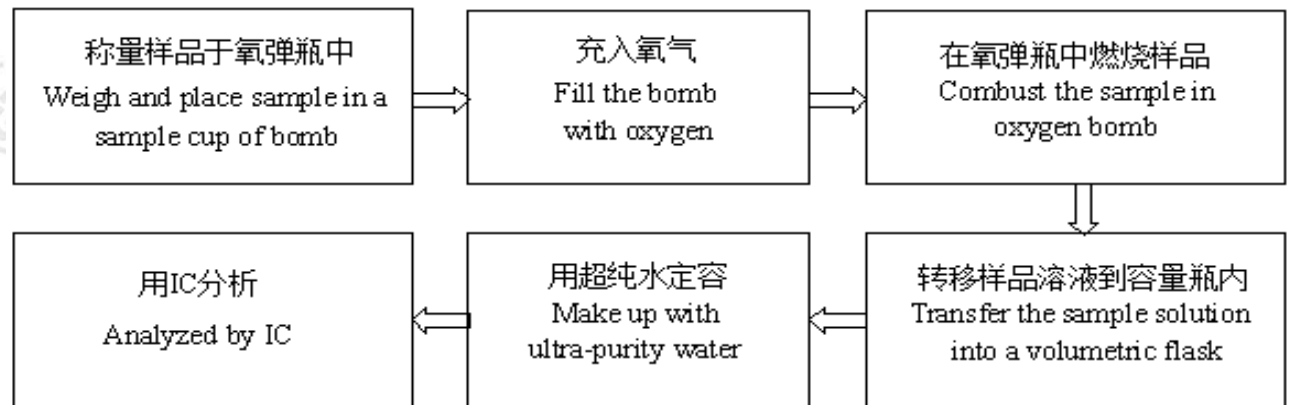
5. (DBP, BBP, DEHP, DIBP)

**Phthalates (DBP, BBP, DEHP, DIBP)**



6. 氟(F) 氯(Cl) (Br) 碘(I)

**Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)**



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## 样品图片 Photo(s) of the sample(s)



A2180098414102001

\*\*\*报告结束\*\*\*  
\*\*\* End of report \*\*\*

### 声明Statement:

1. 检测报告无批准人签字、“专用章”及报告骑缝章无效;  
This report is considered invalidated without approval signature, special seal and the seal on the perforation;
2. 样品及样品信息由申请者提供, 申请者应对其真实性负责, CTI未核实其真实性;  
The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. 本报告检测结果仅对送测样品负责;  
The result(s) shown in this report refer(s) only to the sample(s) tested;
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