



180000343904

# 检测报告

## Test Report

报告编号 A2180211887101001E  
Report No. A2180211887101001E

第 1 页 共 8 页  
Page 1 of 8

申请单位 惠州大亚湾恒一电子有限公司  
Applicant RELIANCE TECHNOLOGY DEVELOPMENT LTD.  
地 址 广东省惠州市大亚湾西区塘布工业区  
Address TANGBU VILLAGE, DAYA BAY WEST DISTRICT, HUIZHOU, CHINA

以下测试之样品及样品信息由申请者提供并确认

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

样品名称	PCB
Sample Name	PCB
样品型号	沉金喷锡
Part No.	沉金喷锡
样品批号	2018-11-17
Item No.	2018-11-17
材料名称	FR-4
Material	FR-4
样品接收日期	2018.11.05
Sample Received Date	Nov. 5, 2018
样品检测日期	2018.11.05-2018.11.08
Testing Period	Nov. 5, 2018 to Nov. 8, 2018

检测要求 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)进行测试。

Test Requested 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) in the submitted sample(s).

检测依据/检测结果 请参见下页。  
Test Method/Test Result(s) Please refer to the following page(s).

主 检

张小琴

审 核

尹丹娜

Tested by

批 准

Approved by

郑晴涛

Reviewed by

日 期

Date

2018.11.08

郑晴涛

技术经理 Technical Manager

No. R338851276

# 检测报告

## Test Report

报告编号 A2180211887101001E  
Report No. A2180211887101001E

第 2 页 共 8 页  
Page 2 of 8

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### 结论 Conclusion

测试样品 Tested Sample	依据标准/指令 According to standard/directive	结果 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.

# 检测报告

## Test Report

报告编号 A2180211887101001E

第 3 页 共 8 页

Report No. A2180211887101001E

Page 3 of 8

检测依据 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

# 检测报告

## Test Report

报告编号 A2180211887101001E

第 4 页 共 8 页

Report No. A2180211887101001E

Page 4 of 8

**检测结果 Test Result(s)**

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 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

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
<b>多溴联苯 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	

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
<b>多溴二苯醚 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	

# 检测报告

## Test Report

报告编号 A2180211887101001E

第 5 页 共 8 页

Report No. A2180211887101001E

Page 5 of 8

**检测结果 Test Result(s)**

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
<b>邻苯二甲酸酯 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

**测试样品/部位描述**

带有黑色油墨的PCB（整体测试）

**Tested Sample/Part Description**

PCB with black ink (Tested as a whole)

**备注:**

- 对于检测铅，镉，汞之样品已完全溶解。
- 按照目前手段，样品无法进一步拆分，样品整体测试，测试结果不代表整体测试样品中任何一种单一材质的含量。
- 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%

# 检测报告 Test Report

报告编号 A2180211887101001E

第 6 页 共 8 页

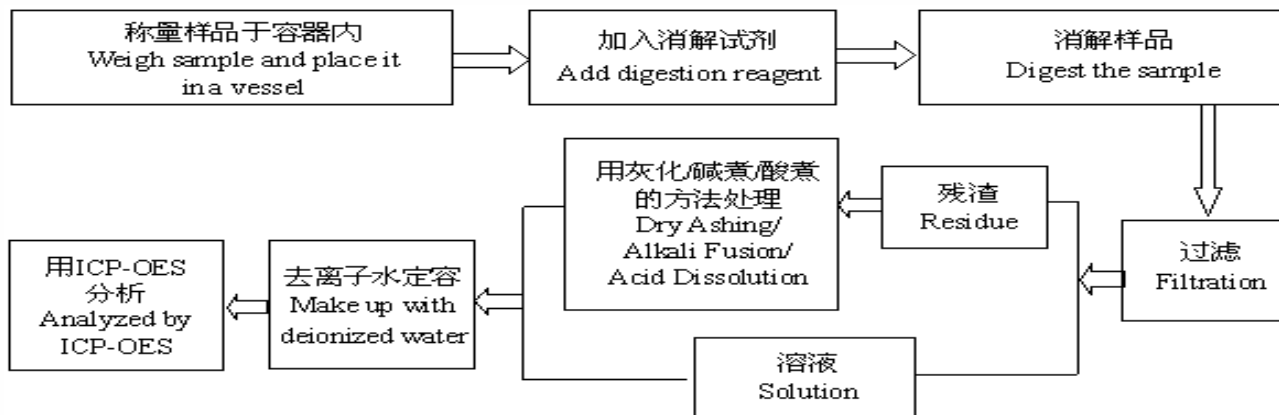
Report No. A2180211887101001E

Page 6 of 8

## 检测流程 Test Process

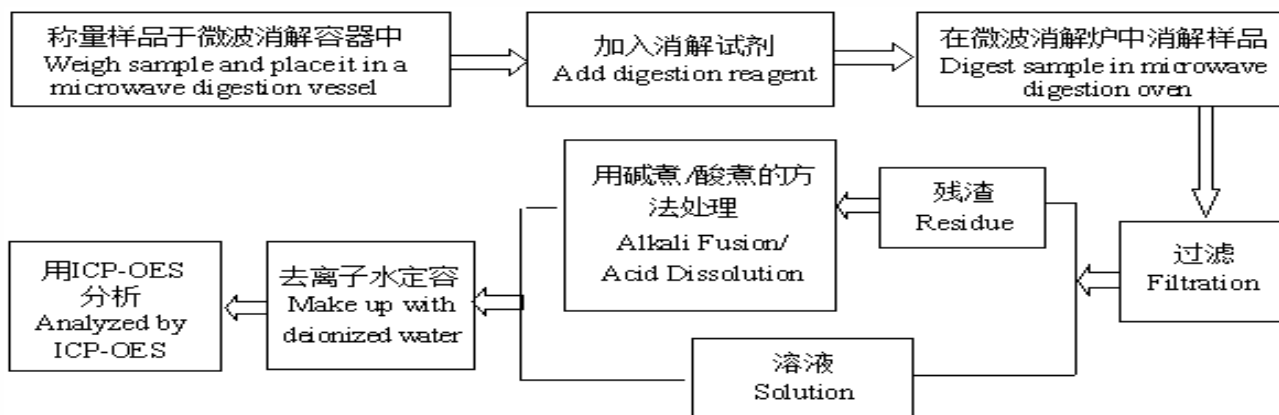
### 1. 铅(Pb), 镉(Cd), 铬(Cr)

Lead(Pb), Cadmium(Cd), Chromium(Cr)



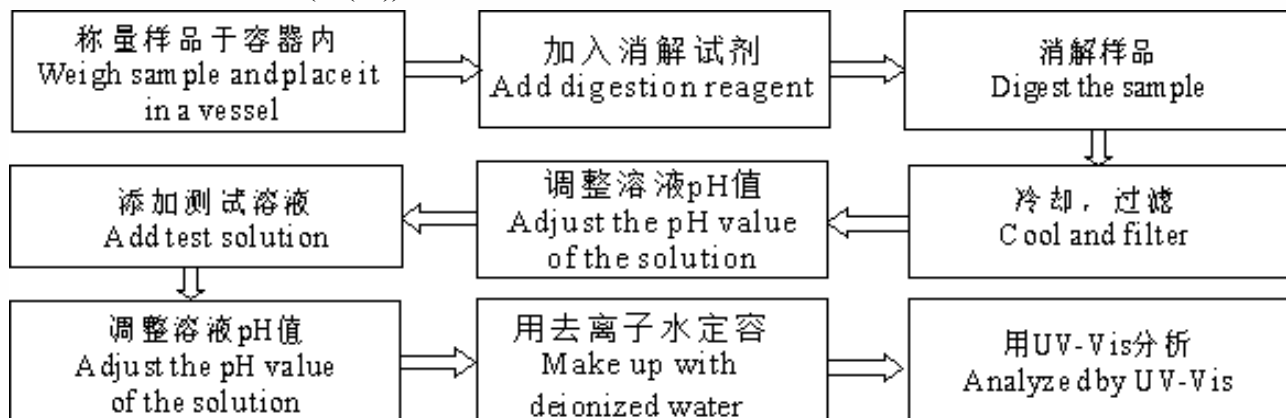
### 2. 汞(Hg)

Mercury(Hg)



### 3. 六价铬(Cr(VI))

Hexavalent Chromium(Cr(VI))



# 检测报告 Test Report

报告编号 A2180211887101001E

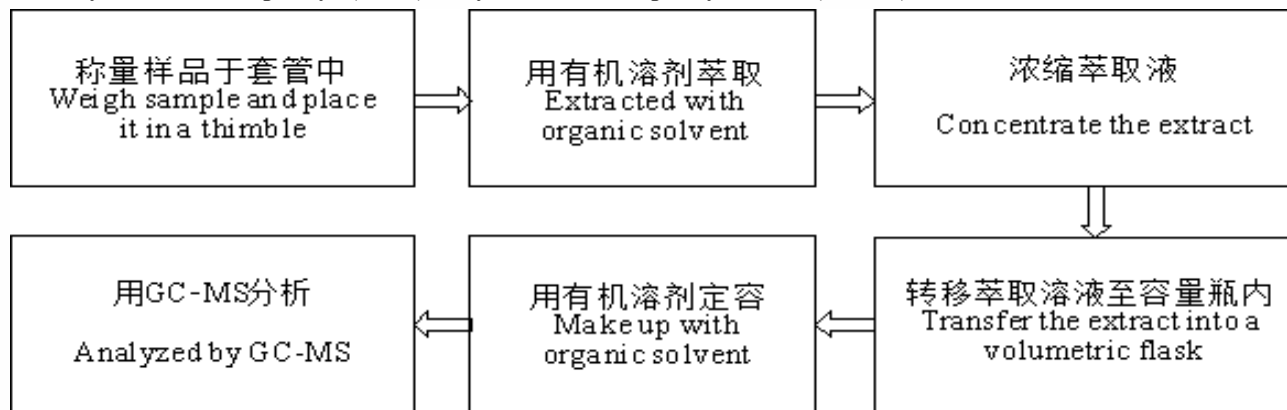
第 7 页 共 8 页

Report No. A2180211887101001E

Page 7 of 8

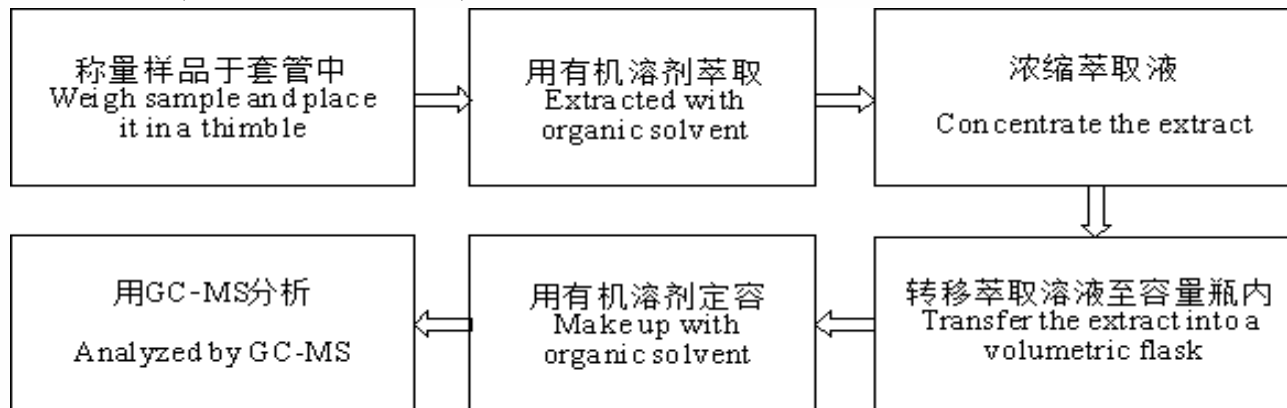
## 4. 多溴联苯(PBBs), 多溴二苯醚(PBDEs)

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



## 5. 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



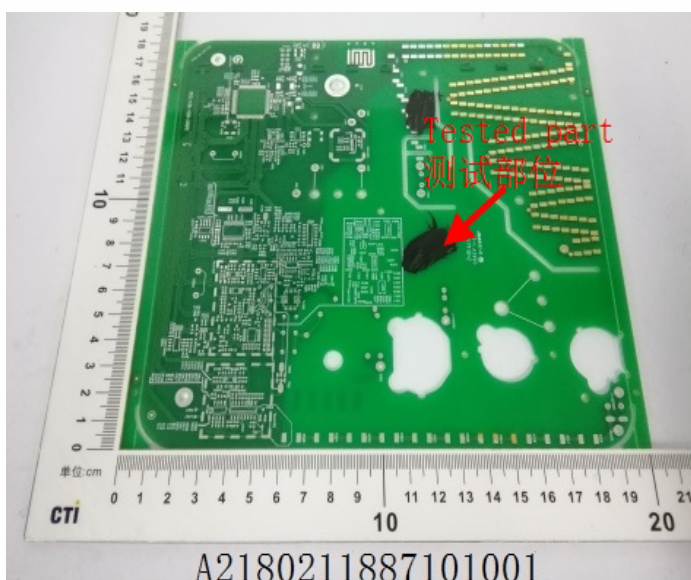


# 检测报告 Test Report

报告编号 A2180211887101001E  
Report No. A2180211887101001E

第 8 页 共 8 页  
Page 8 of 8

## 样品图片 Photo(s) of the sample(s)



\*\*\*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受测样品负责;  
The result(s) shown in this report refer(s) only to the sample(s) tested;
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