



# 检测报告

## Test Report

报告编号 A2220506793101005E  
Report No. A2220506793101005E

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报告抬头公司名称 福建省乔光电子科技有限公司  
Company Name FUJIAN QIAOGUANG ELECTRONIC TECHNOLOGY CO.,LTD  
shown on Report  
地 址 福建省龙岩市漳平市西园镇登榜工贸新区大洋路21号  
Address NO.21,DENGBANG INDUSTRIAL AND TRADE NEW AREA, DAYANG ROAD, XIYUAN TOWN, ZHANGPING CITY, LONGYAN CITY, FUJIAN PROVINCE

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 applicant

样品名称 瞬态电压抑制二极管 TVS  
Sample Name 瞬态电压抑制二极管 TVS  
材料名称 芯片+环氧树脂+框架+焊片+锡  
Material 芯片+环氧树脂+框架+焊片+锡  
样品接收日期 2022.11.10  
Sample Received Date Nov. 10, 2022  
样品检测日期 2022.11.10-2022.11.15  
Testing Period Nov. 10, 2022 to Nov. 15, 2022

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

Tested by

批 准

Approved by

郑晴涛  
郑晴涛

郑晴涛

技术经理 Technical Manager

审 核

Reviewed by

日 期

Date

夏建

2022.11.15

No. R179755343

广东省深圳市宝安区新安街道兴东社区华测检测大楼



CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

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**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

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### 检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
铅 Lead (Pb)	11389 mg/kg	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))*	N.D.	8 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
<b>多溴联苯 Polybrominated Biphenyls (PBBs)*</b>		
一溴联苯 Monobromobiphenyl	N.D.	5 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
<b>多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)*</b>		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 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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### 检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
<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
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 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
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

**样品/部位描述** 带有灰色印字的黑色本体和带有银色镀层的金属引脚（整体混合测试）  
**Sample/Part Description** Black body with grey printing and metal pin with silvery plating(Mix all)

**备注:**

- 对于检测铅, 镉, 汞之样品已消解完全。
- 根据客户要求, 对样品进行整体混合测试, 测试结果不代表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
- 根据客户声明, 样品涉及欧盟RoHS指令2011/65/EU豁免项第7(c)-I条: 电气电子元件的玻璃或陶瓷中的铅, 电容器的介电陶瓷除外, 如压电玻璃或陶瓷装置。

**Remark:**

- The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.
- As specified by client, the test was conducted by mixing all materials together. 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

-According to the client's statement, the material of the sample(s) fall into exemption items 7(c)-I according to EU Directive 2011/65/EU: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

**注释:** -\*表示该项目/方法不在 CNAS 认可范围内。

-本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。

**Note:** -\*indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.

-The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.

# 检测报告 Test Report

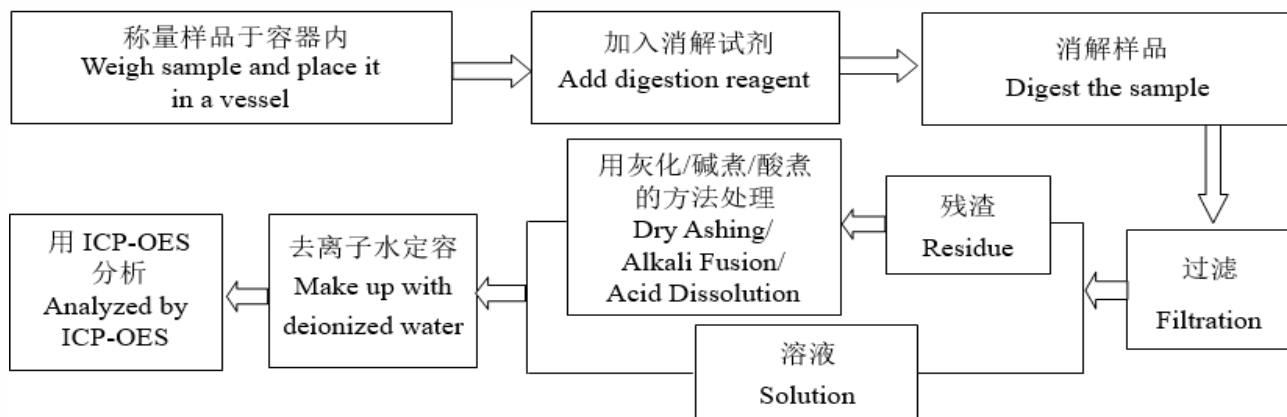
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## 检测流程 Test Process

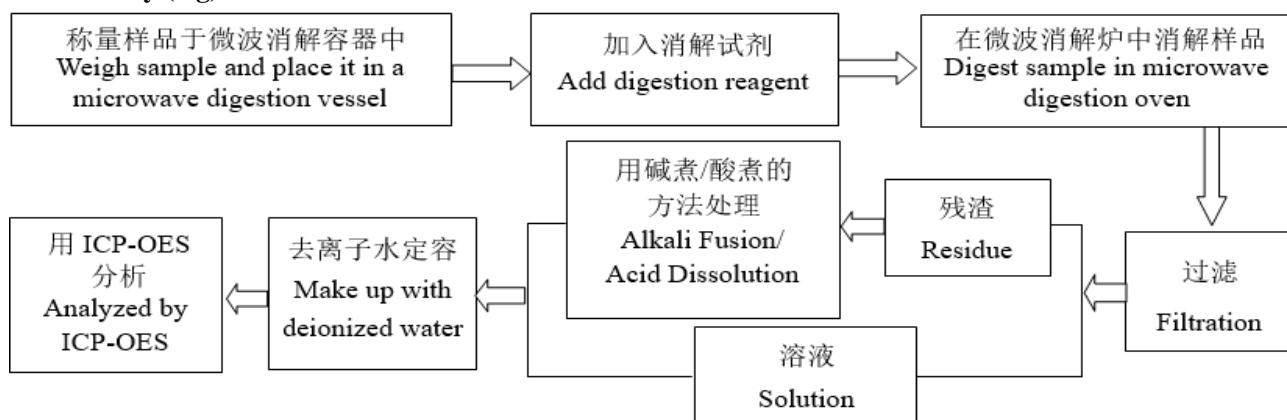
### 1. 铅(Pb), 镉(Cd), 铬(Cr)

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



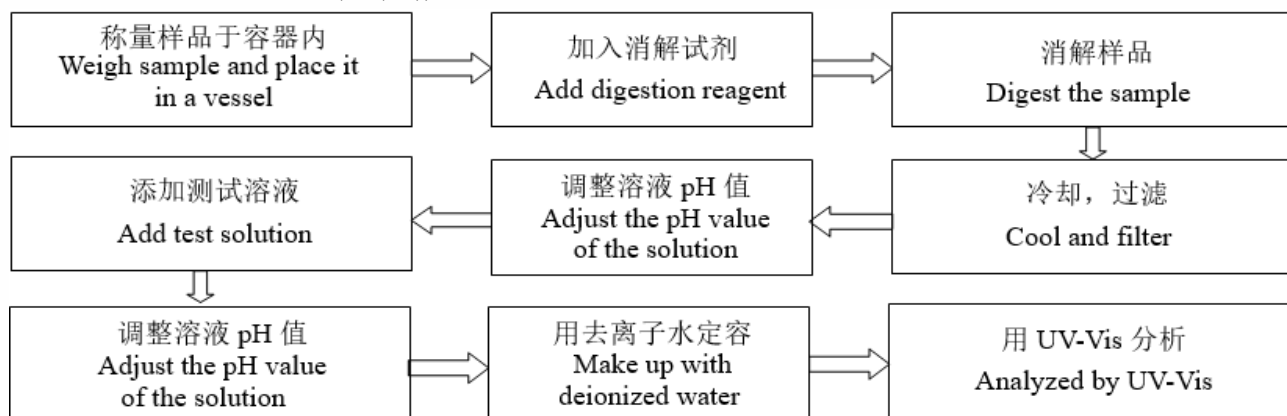
### 2. 汞(Hg)

#### Mercury (Hg)



### 3. 六价铬(Cr(VI))

#### Hexavalent Chromium (Cr(VI))



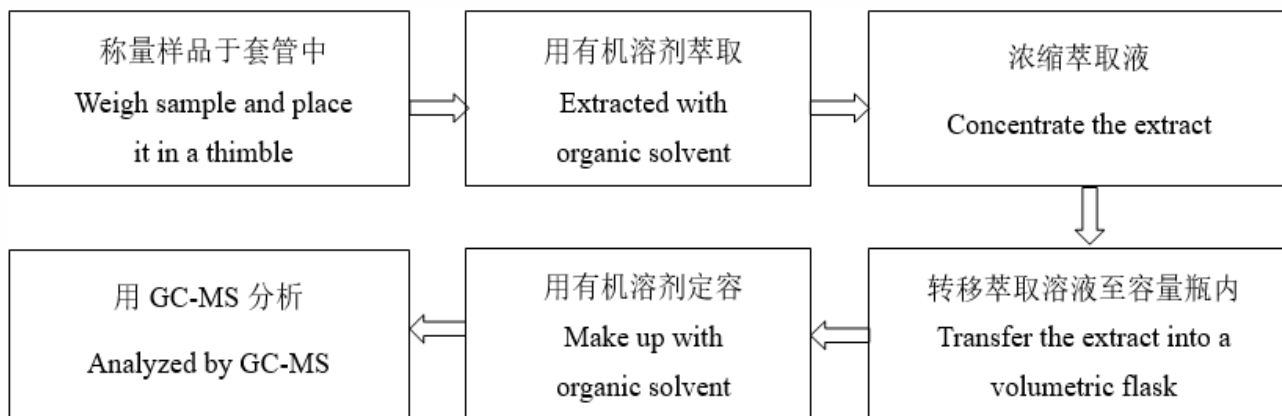
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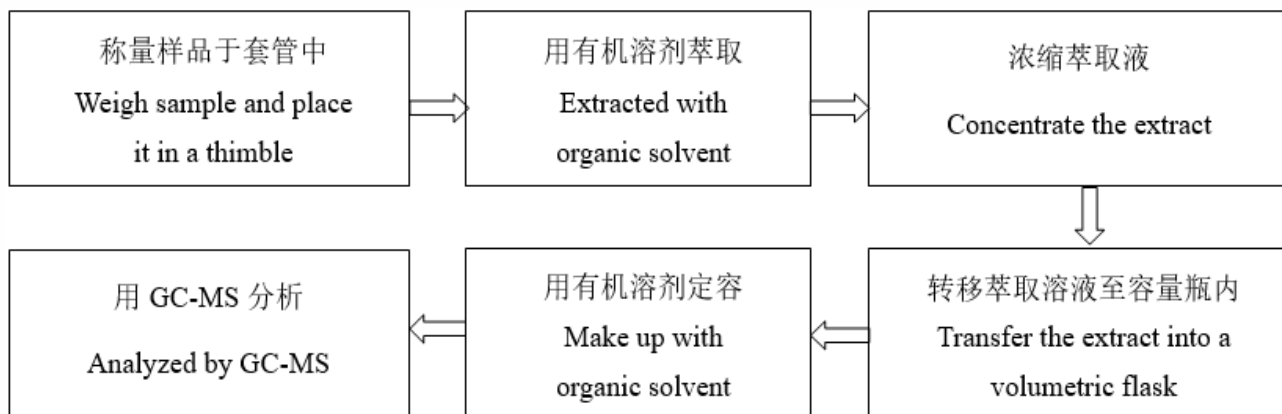
## 4. 多溴联苯(PBBs), 多溴二苯醚(PBDEs)

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



## 5. 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



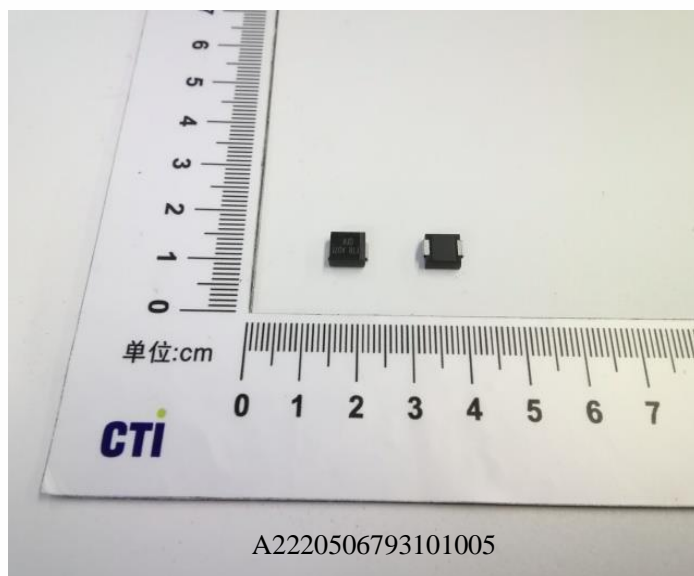
华测检测有限公司

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## 样品图片 Photo(s) of the sample(s)



### 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 invalid without approved signature, special seal and the seal on the perforation;
2. 报告抬头公司名称及地址、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 Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant 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;
4. 未经CTI书面同意, 不得部分复制本报告;  
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5. 如检测报告中的英文内容与中文内容有差异, 以中文为准。  
In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

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