



# 检测报告 Test Report

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申请单位 惠州德晋昌光电科技有限公司/惠州市华晟电子线材有限公司  
Applicant HUIZHOU DEJINCHANG OPTOELECTRONICS TECHNOLOGY CO.,LTD/HUI ZHOU HUA SHENG ELECTRONIC WIRE & CABLE CO.,LTD.  
地 址 惠州市仲恺高新区陈江街道办大欣工业区第五区  
Address NO.5 SECTION DAXIN INDUSTRIAL PARK,CHENJIANG STREET,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 裸铜线  
Sample Name Copper Wire  
材料名称 铜  
Material Cu  
样品接收日期 2019.06.12  
Sample Received Date Jun. 12, 2019  
样品检测日期 2019.06.12-2019.06.18  
Testing Period Jun. 12, 2019 to Jun. 18, 2019

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), 铍(Be), 锑(Sb)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), Beryllium(Be), Antimony(Sb) 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

张瑞斌  
郑晴涛

郑晴涛

技术经理 Technical Manager

华测检测认证集团股份有限公司  
Centre Testing International Group Co.,Ltd.  
CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

审 核

Reviewed by

日 期

Date

方理松

2019.06.18

No. R393381811

广东省深圳市宝安区新安街道兴东社区华测检测大楼

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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 62321-7-1:2015	UV-Vis
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
铍 Beryllium(Be)	参考US EPA 3050B:1996 & US EPA 6010C:2007 Refer to US EPA 3050B:1996 & US EPA 6010C:2007	ICP-OES
锑 Antimony(Sb)	参考US EPA 3050B:1996 & US EPA 6010C:2007 Refer to US EPA 3050B:1996 & US EPA 6010C:2007	ICP-OES

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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)	N.D.	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. ▼	0.10 µg/cm <sup>2</sup> (LOQ)

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
测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
铍 Beryllium(Be)	N.D.	10 mg/kg
锑 Antimony(Sb)	N.D.	5 mg/kg

样品/部位描述 铜色金属线  
Sample/Part Description Cupreous metal wire

备注: 对于检测铅, 镉, 汞, 铍, 锑之样品已完全溶解。  
-N.D. = 未检出 (小于方法检出限或定量限)  
-mg/kg = ppm = 百万分之一  
-LOQ = 定量限, 六价铬的定量限为0.10  $\mu\text{g}/\text{cm}^2$   
- $\nabla$ 六价铬浓度小于0.10  $\mu\text{g}/\text{cm}^2$  样品未检出六价铬。

**Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Beryllium, Antimony.**  
-MDL = Method Detection Limit  
-N.D. = Not Detected (<MDL or LOQ)  
-mg/kg = ppm = parts per million  
-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10  $\mu\text{g}/\text{cm}^2$   
- $\nabla$ The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10  $\mu\text{g}/\text{cm}^2$ . The coating is considered a non-Cr(VI) based coating.

注释: 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: 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

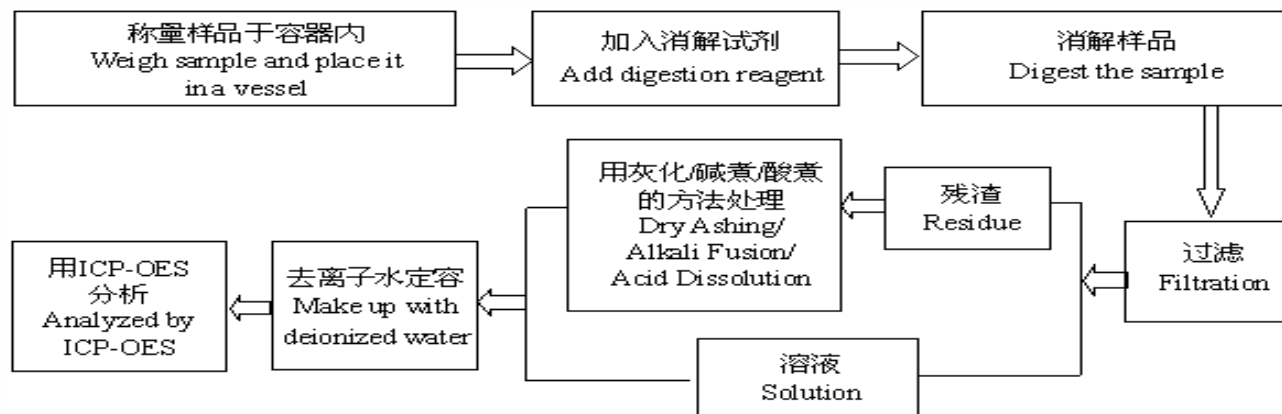
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## 检测流程 Test Process

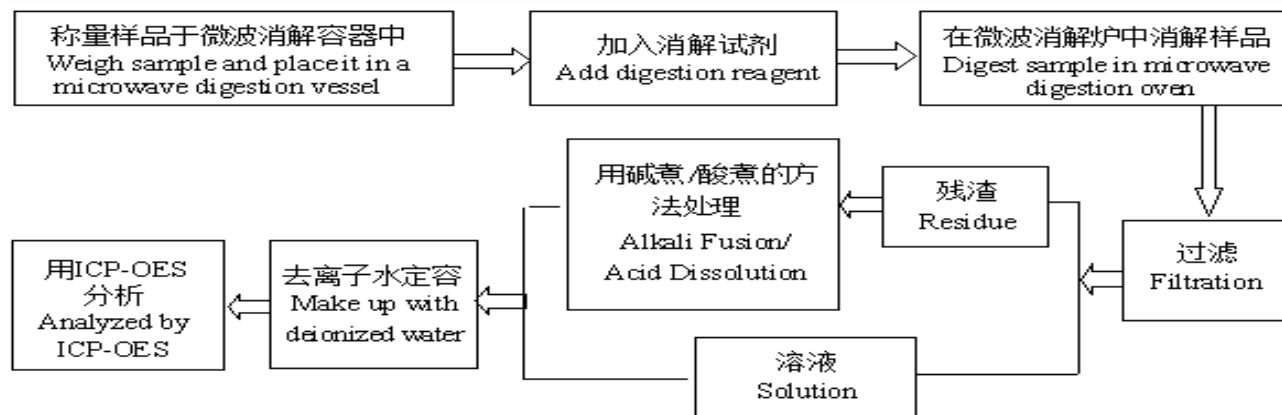
### 1. 铅(Pb), 镉(Cd)

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



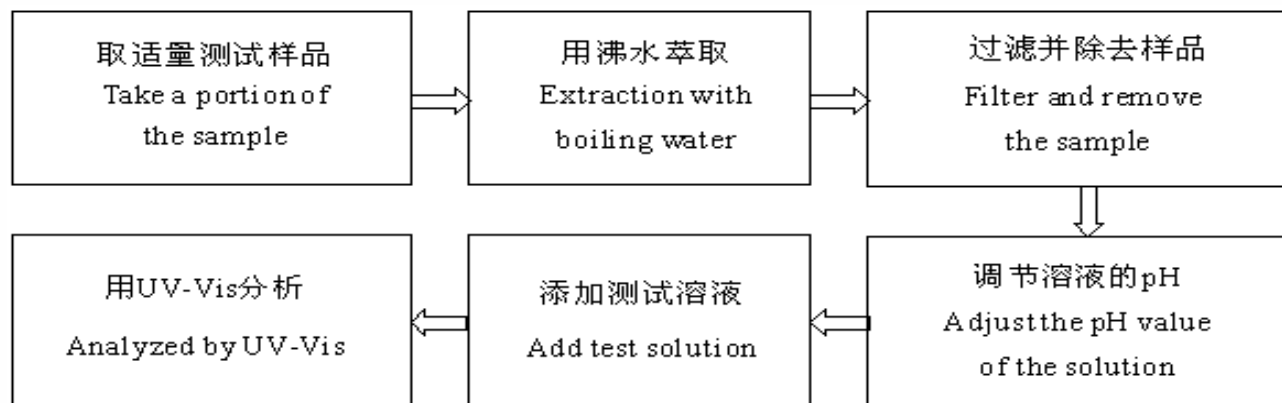
### 2. 汞(Hg)

#### Mercury(Hg)



### 3. 六价铬(Cr(VI))

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



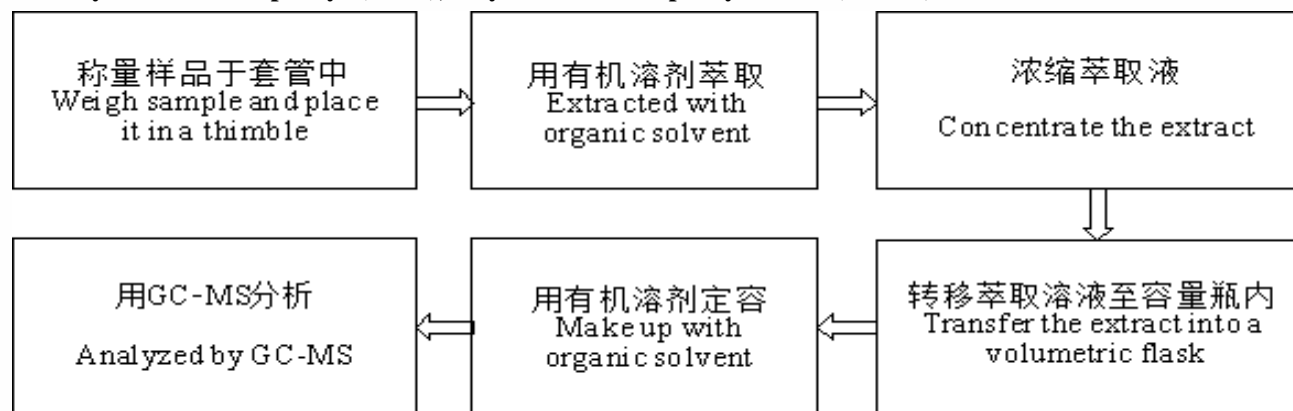
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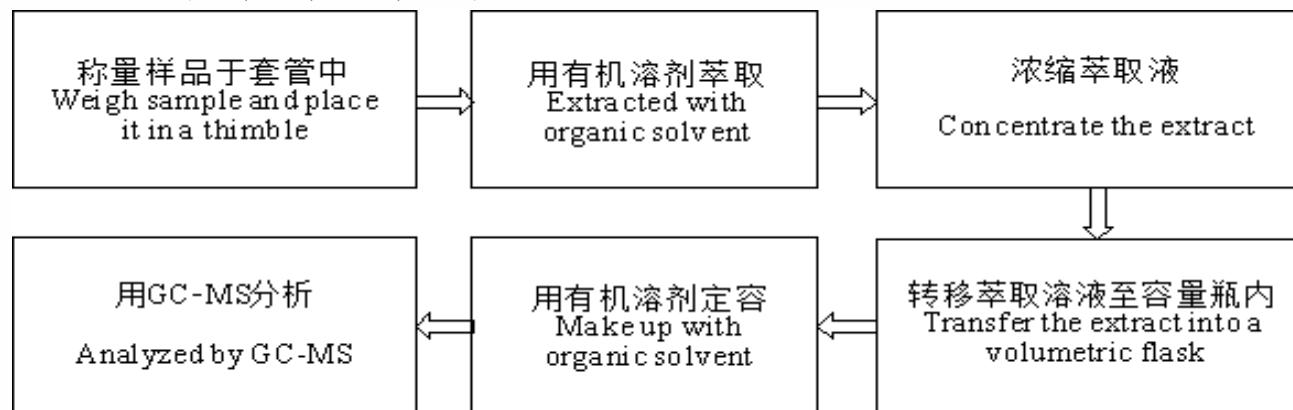
## 4. 多溴联苯 (PBBs), 多溴二苯醚 (PBDEs)

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



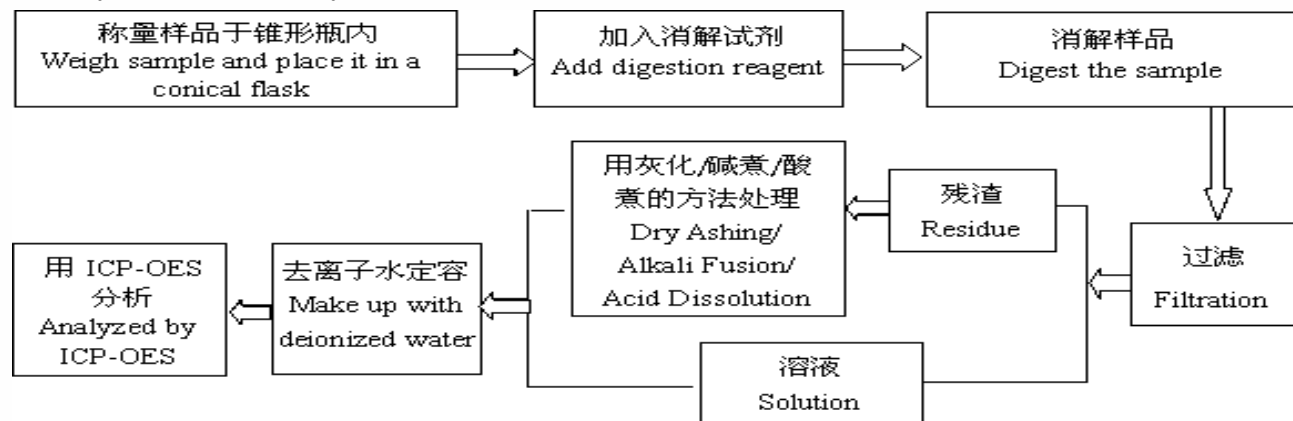
## 5. 邻苯二甲酸酯 (DBP, BBP, DEHP, DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



## 6. 铍 (Be), 锑 (Sb)

Beryllium(Be), Antimony(Sb)



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## 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 invalid without approved 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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