

# 检测报告 Test Report

报告编号 RHS01F023424E  
Report No. RHS01F023424E

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申请单位 惠州市興利業精密電子廠有限公司[敬業電子(惠州)有限公司]  
Applicant BENNIC COMPONENTS  
地 址 廣東省惠州市惠城區惠風西四路 82 號(平南工業園 50 號小區)  
Address 82, HUI FENG XI SI ROAD, HUIZHOU, GUANG DONG PROVIENCE

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 Sample Name 请参见下页。Please refer to the following page(s).  
样品接收日期 2013.12.12  
Sample Received Date Dec. 12, 2013  
样品检测日期 2013.12.12-2013.12.16  
Testing Period Dec. 12, 2013 to Dec. 16, 2013

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

主 检 Rick Lin  
Tested by

审 核 Vargan He  
Reviewed by

批 准  
Approved by

日 期 2013.12.16  
Date



Danny Liu  
Technical Manager

No. 1012263851

深圳市华测检测技术股份有限公司  
Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

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序号 No.	成品名称 Finished Product Name	样品名称 Sample Name(s)
(1)	電解電容器 ALUMINIUM ELECTROLYTIC CAPACITORS	鋁箔 ALUMINUM FOIL
(2)		鋁殼 ALUMINUM CASE
(3)		導針 LEAD WIRE
(4)		電解紙 PAPER
(5)		電解液 ELECTROLYTE
(6)		白色油墨 WHITE INK
(7)		黑色油墨 BLACK INK
(8)		PET 黑色套管 PET BLACK PLASTIC TUBE
(9)		PET 深藍色套管 PET DARK BLUE PLASTIC TUBE
(10)		膠蓋 RUBBER

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### 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)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) in the submitted sample(s).

### 检测依据 Test Method

测试项目 Tested Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES
	IEC 62321:2008 Ed.1 Sec.9	
	IEC 62321:2008 Ed.1 Sec.10	
镉 Cadmium (Cd)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES
	IEC 62321:2008 Ed.1 Sec.9	
	IEC 62321:2008 Ed.1 Sec.10	
汞 Mercury (Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis
	IEC 62321:2008 Ed.1 Annex C	
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS

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### 检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result		方法检测限 MDL
	(1)	(2)	
铅 Lead (Pb)	N.D.	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	阴性 Negative	阴性 Negative	/

测试项目 Tested Item(s)	结果 Result		方法检测限 MDL
	(3)	(4)	
铅 Lead (Pb)	N.D.	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	---	N.D.	2 mg/kg
	阴性 Negative	---	/

测试项目 Tested Item(s)	结果 Result		方法检测限 MDL
	(5)	(6)	
铅 Lead (Pb)	N.D.	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	N.D.	2 mg/kg

测试项目 Tested Item(s)	结果 Result		方法检测限 MDL
	(7)	(8)	
铅 Lead (Pb)	N.D.	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	N.D.	2 mg/kg

测试项目 Tested Item(s)	结果 Result		方法检测限 MDL
	(9)	(10)	
铅 Lead (Pb)	N.D.	10 mg/kg	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	N.D.	2 mg/kg

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### 检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result		方法检测限 MDL
	(4)	(5)	
<b>多溴联苯 Polybrominated Biphenyls(PBBs)</b>			
一溴联苯 Monobromobiphenyl	N.D.	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	N.D.	5 mg/kg
<b>多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)</b>			
一溴二苯醚 Monobromodiphenyl ether	N.D.	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	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		方法检测限 MDL
	(6)	(7)	
<b>多溴联苯 Polybrominated Biphenyls(PBBs)</b>			
一溴联苯 Monobromobiphenyl	N.D.	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	N.D.	5 mg/kg
<b>多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)</b>			
一溴二苯醚 Monobromodiphenyl ether	N.D.	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	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		方法检测限 MDL
	(8)	(9)	
<b>多溴联苯 Polybrominated Biphenyls(PBBs)</b>			
一溴联苯 Monobromobiphenyl	N.D.	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	N.D.	5 mg/kg
<b>多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)</b>			
一溴二苯醚 Monobromodiphenyl ether	N.D.	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	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	方法检测限 MDL
	(10)	
<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
<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

## 测试样品/部位描述 Tested Sample/Part Description

- |                               |                               |
|-------------------------------|-------------------------------|
| (1) 灰色金属箔 Gray metal foil     | (6) 白色油墨 White ink            |
| (2) 银白色金属 Silver-white metal  | (7) 黑色油墨 Black ink            |
| (3) 银色金属 Silvery metal        | (8) 黑色塑料套管 Black plastic tube |
| (4) 米白色纸 Beige-white paper    | (9) 蓝色塑料套管 Blue plastic tube  |
| (5) 浅黄色液体 Light yellow liquid | (10) 黑色橡胶 Black rubber        |



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注释: 对于检测铅, 镉, 汞之样品已完全溶解。  
-N.D. = 未检出 (小于方法检测限)  
-mg/kg = ppm = 百万分之几  
-阴性表示不含有六价铬, 由表面积为 50cm<sup>2</sup> 的样品所萃取出来的溶液中的六价铬的浓度小于 0.02mg/kg

Note: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**  
-MDL = Method Detection Limit  
-N.D. = Not Detected (<MDL)  
-mg/kg = ppm = parts per million  
-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm<sup>2</sup> sample surface area used.

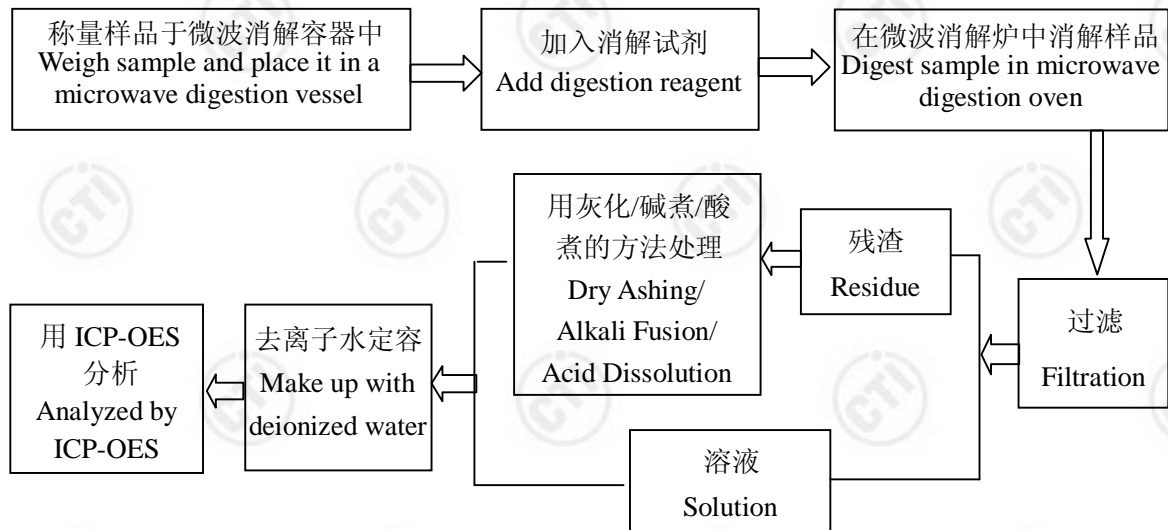
备注: 报告编号中“E”表示此报告为中英文对照版本。

Remark: **The end sign of report number E represents the bilingual version.**

## 检测流程 Test Process

### 1. 铅 Lead(Pb), 镉 Cadmium(Cd)

#### (1) IEC 62321:2008 Ed.1 Sec.8

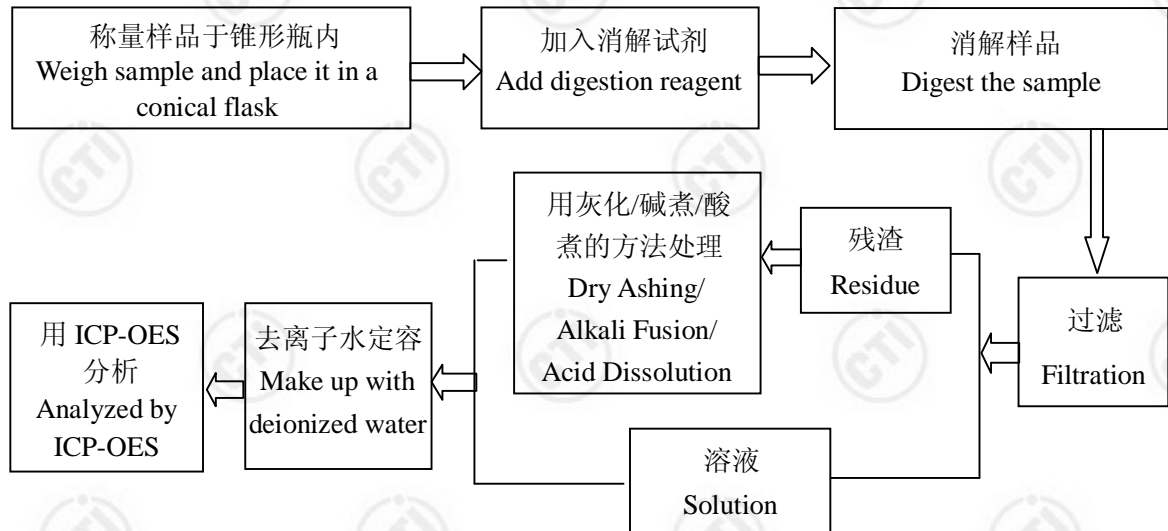


# 检测报告 Test Report

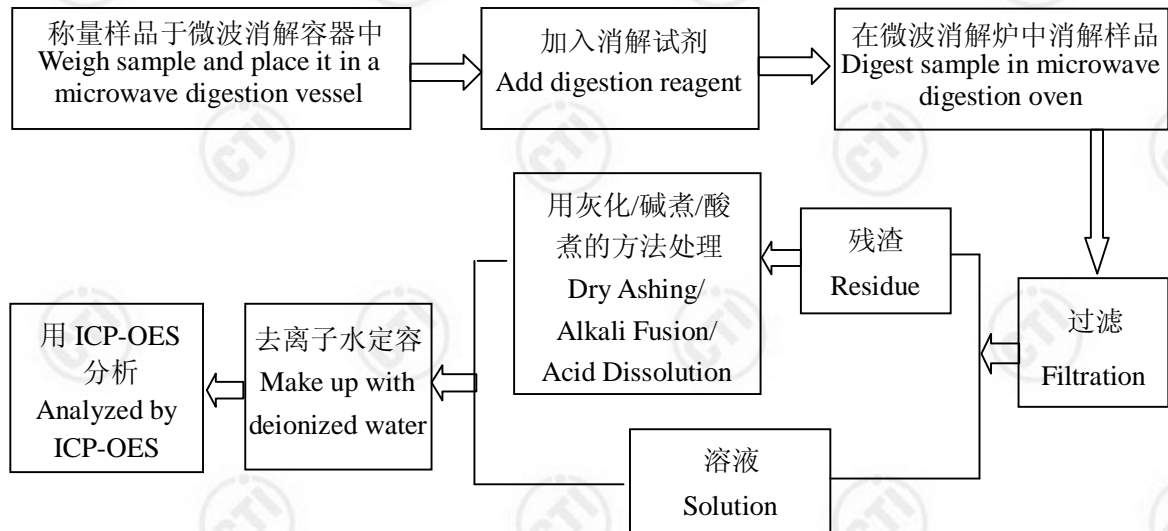
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## (2) IEC 62321:2008 Ed.1 Sec.9



## (3) IEC 62321:2008 Ed.1 Sec.10

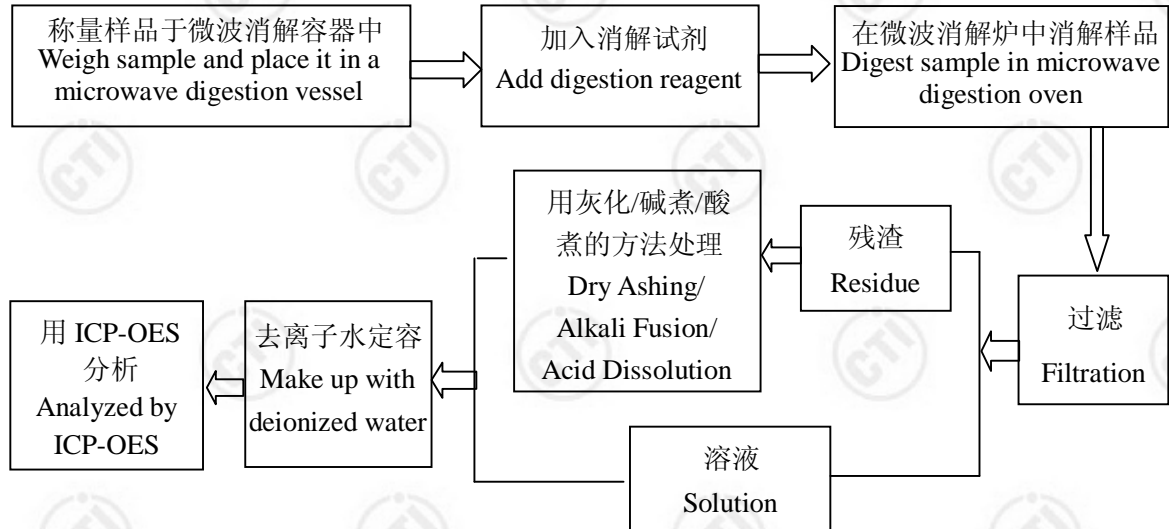


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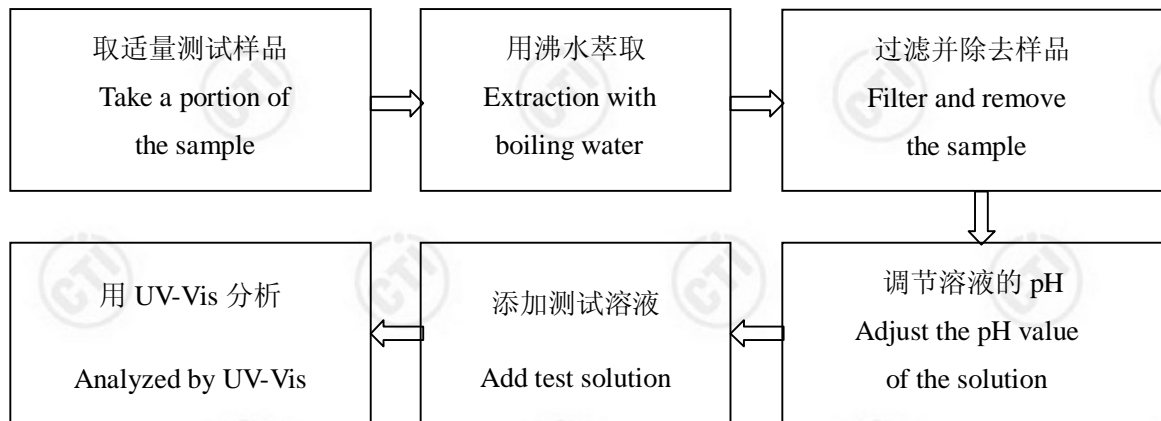
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## 2. 汞 Mercury(Hg)



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

(1) IEC 62321:2008 Ed. 1 Annex B

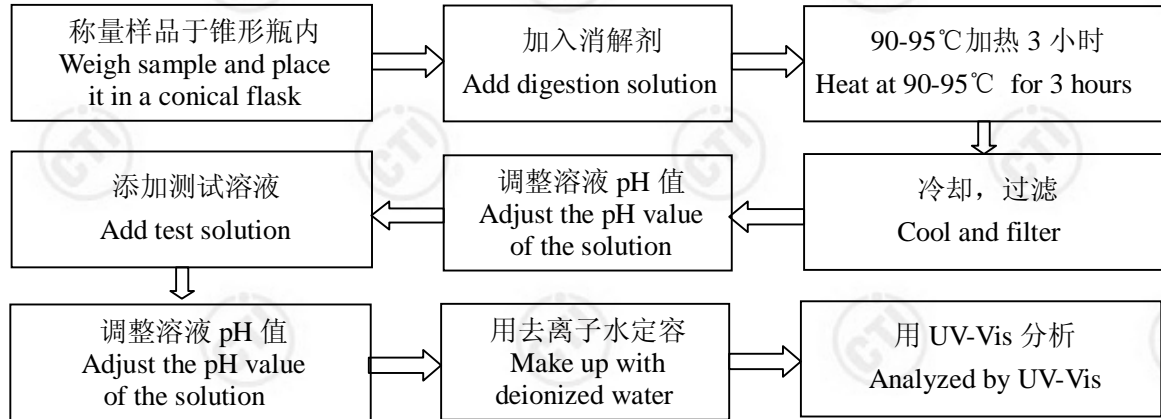


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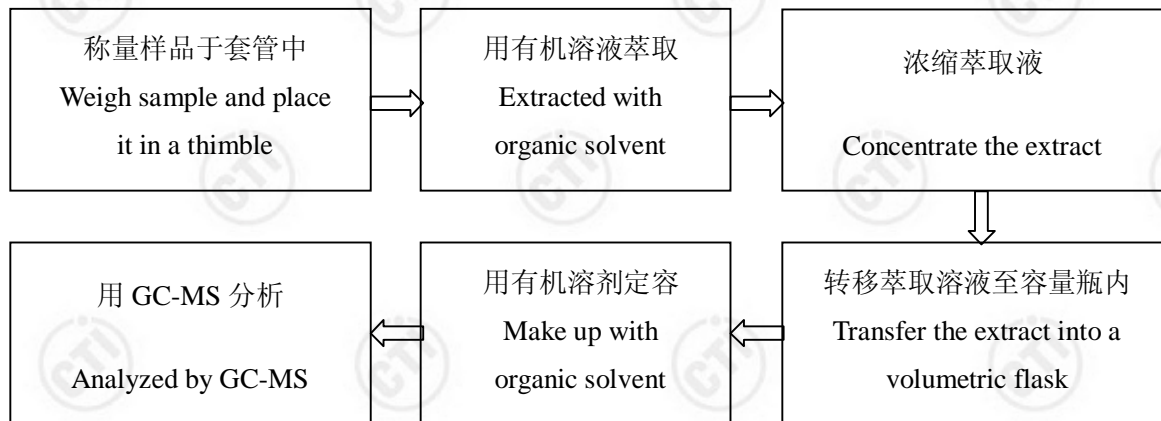
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## (2) IEC 62321:2008 Ed. 1 Annex C



## 4. 多溴联苯 Polybrominated Biphenyls(PBBs), 多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)

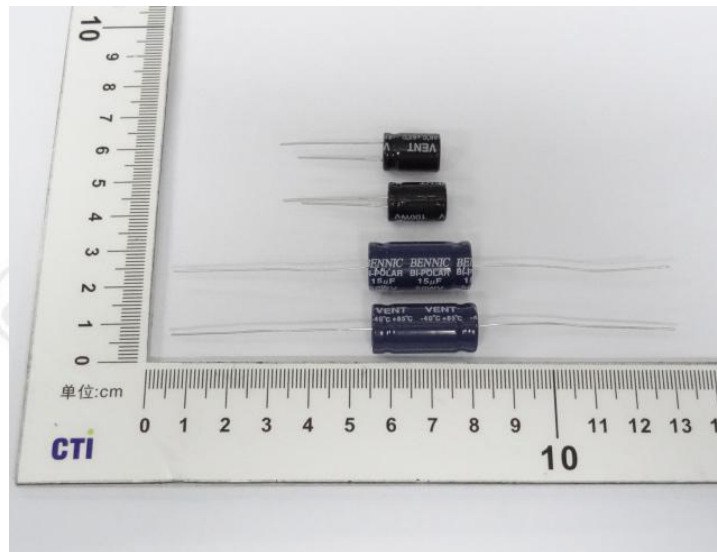


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## 成品图片 Photo(s) of the Finished Product(s)



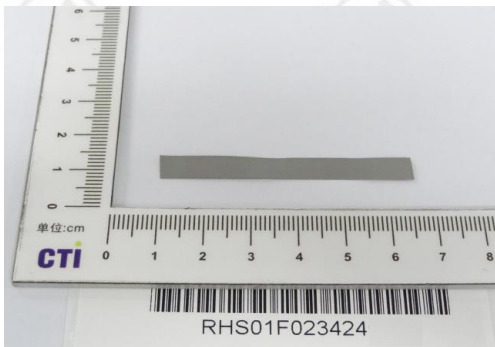
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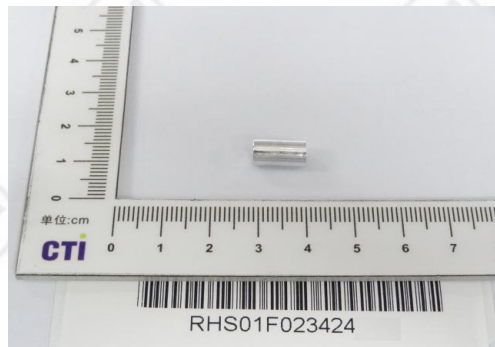
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## 样品图片 Photo(s) of the sample(s)

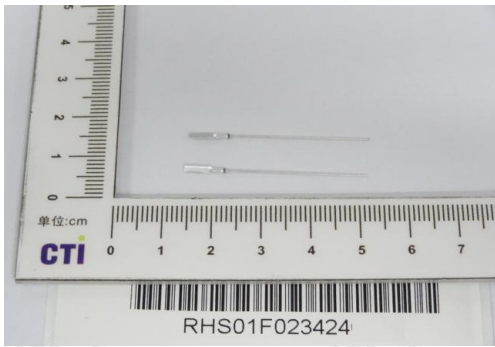
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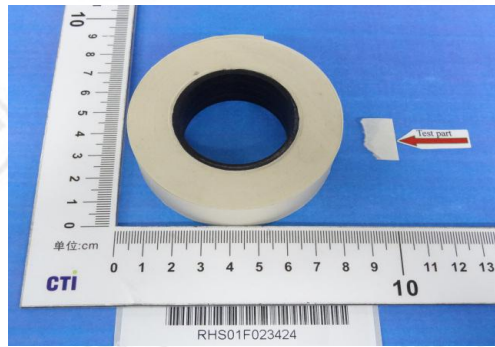
(2)



(3)



(4)



(5)



(6)



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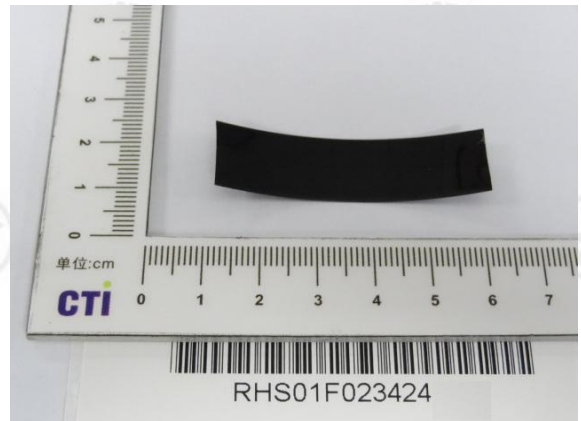
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## 样品图片 Photo(s) of the sample(s)

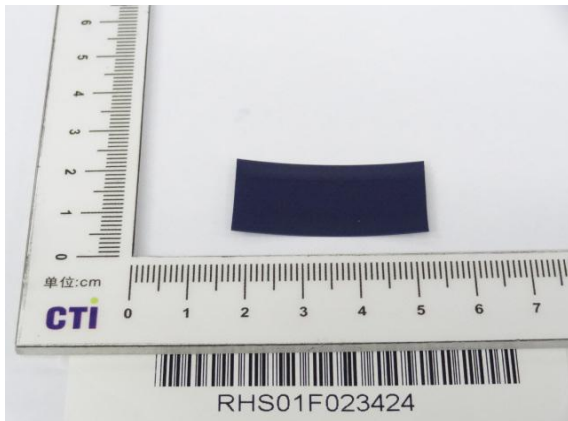
(7)



(8)



(9)



(10)



\*\*\* 报告结束 \*\*\*

\*\*\* End of Report \*\*\*

检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经 CTI 书面同意，不得部分复制本报告。

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.