



Test Report

报告编号 A21901620471010104E
Report No. A21901620471010104E

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申请单位 东莞连靖电子有限公司
Applicant DONGGUAN LIEAN GIMN ELECTRONIC CO., LTD
地 址 东莞市桥头镇禾坑村石路第二工业区 38 号
Address NO., 38 SECONG INDUSTRIAL AREA HESHI RD HEKENG VILLAGE QIAOTOU
DONGGUAN CITY 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

样品序号 Sample No.	样品名称 Sample Name(s)
001	碳膜电阻器 CARBON FILM FIXED RESISTORS
002	金属膜电阻器 METAL FILM FIXED RESISTORS
003	金属氧化膜电阻器 METAL OXIDE FILM FIXED RESISTORS
004	绕线电阻器 WIREWOUND NOFLAME RESISTORS
005	保险丝电阻器 FUSE RESISTORS
006	高压玻璃釉电阻器 HIGH PRESSURE GLASS GLAZE RESISTORS
007	水泥电阻器 CEMENT TYPE RESISTORS
008	色码电感 COLOR CODE INDUCTANCE
009	电子引线 ELECTRONIC LEAD

样品接收日期 2019.07.02
Sample Received Date Jul. 2, 2019
样品检测日期 2019.07.02-2019.07.06
Testing Period Jul. 2, 2019 to Jul. 6, 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)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 刘宇
Tested by

审 核 方理松
Reviewed by

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

日 期 2019.07.06
Date

No. R187211508

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

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 Tested 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
	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
	001	002	003	
铅 Lead (Pb)	N.D.	N.D.	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	N.D.	N.D.	8 mg/kg
	--	--	--	0.10 µg/cm ² (LOQ)

测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	004	005	006	
铅 Lead (Pb)	N.D.	N.D.	764 mg/kg	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	N.D.	N.D.	8 mg/kg
	--	--	--	0.10 µg/cm ² (LOQ)

测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	007	008	009	
铅 Lead (Pb)	N.D.	N.D.	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	N.D.	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	N.D.	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	N.D.	--	8 mg/kg
	--	--	N.D.▼	0.10 µg/cm ² (LOQ)

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测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	001	002	003	
多溴联苯 Polybrominated Biphenyls(PBBs)				
一溴联苯 Monobromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	004	005	006	
多溴联苯 Polybrominated Biphenyls(PBBs)				
一溴联苯 Monobromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg

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测试项目 Tested Item(s)	结果 Result		方法检出限 MDL
	007	008	
多溴联苯 Polybrominated Biphenyls(PBBs)			
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

测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	001	002	003	
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)				
一溴二苯醚 Monobromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg

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测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	004	005	006	
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)				
一溴二苯醚 Monobromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result		方法检出限 MDL
	007	008	
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)			
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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测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	001	002	003	
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)				
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	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.	N.D.	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.	N.D.	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result			方法检出限 MDL
	004	005	006	
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)				
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	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.	N.D.	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.	N.D.	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	N.D.	50 mg/kg

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测试项目 Tested Item(s)	结果 Result		方法检出限 MDL
	007	008	
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)			
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	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.	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.	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	50 mg/kg

样品/部位描述 Sample/Part Description

- 001 带有多种颜色油墨的卡其色本体（整体测试） Khaki body with multi-color ink(Tested as a whole)*
- 002 带有多种颜色油墨的蓝色本体（整体测试） Blue body with multi-color ink(Tested as a whole)*
- 003 带有多种颜色油墨的灰色本体（整体测试） Gray body with multi-color ink(Tested as a whole)*
- 004 带有多种颜色油墨的灰色本体（整体测试） Gray body with multi-color ink(Tested as a whole)*
- 005 带有多种颜色油墨的灰色本体（整体测试） Gray body with multi-color ink(Tested as a whole)*
- 006 带有多种颜色油墨的灰色本体（整体测试） Gray body with multi-color ink(Tested as a whole)*
- 007 带有黑色印字的白色本体（整体混合测试） White body with black printing(Mix all)*¹
- 008 带有多种颜色油墨的绿色本体（整体测试） Green body with multi-color ink(Tested as a whole)*
- 009 混测，带有银色镀层的金属引脚 Mixed test, metal pin with silvery plating*²

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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。
-*¹ 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。
-*² 根据客户要求, 对样品进行混合测试, 测试结果不代表混合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 $\mu\text{g}/\text{cm}^2$
-▼六价铬浓度小于 0.10 $\mu\text{g}/\text{cm}^2$, 样品未检出六价铬。
-本报告的测试结果引自于报告 A219016204710101E。

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.**
-*¹ **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.**
-*² **As specified by client, the test was conducted by mixing several samples 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 or LOQ)
-mg/kg = ppm = parts per million
-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 $\mu\text{g}/\text{cm}^2$
-▼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.
-The test result(s) is(are) presented in reference to the result(s) that reported in A219016204710101E.

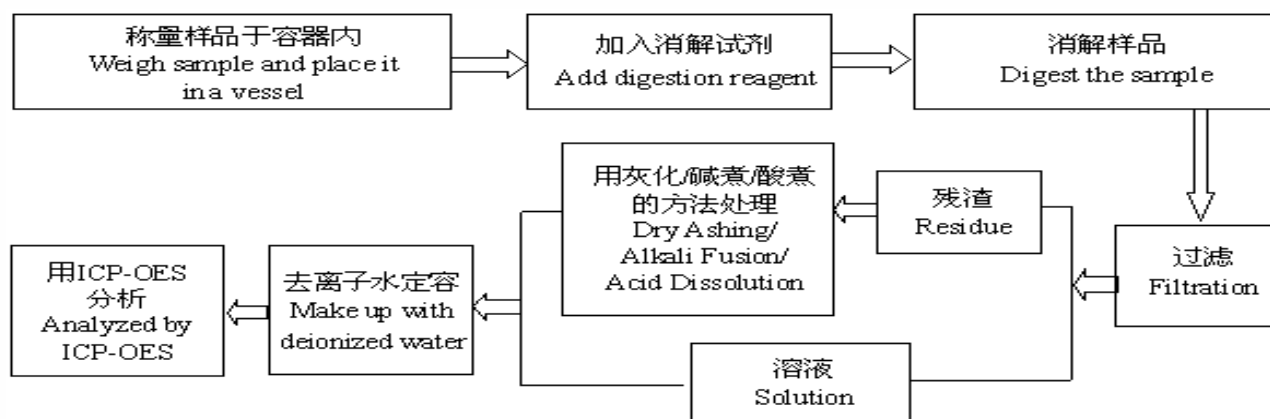
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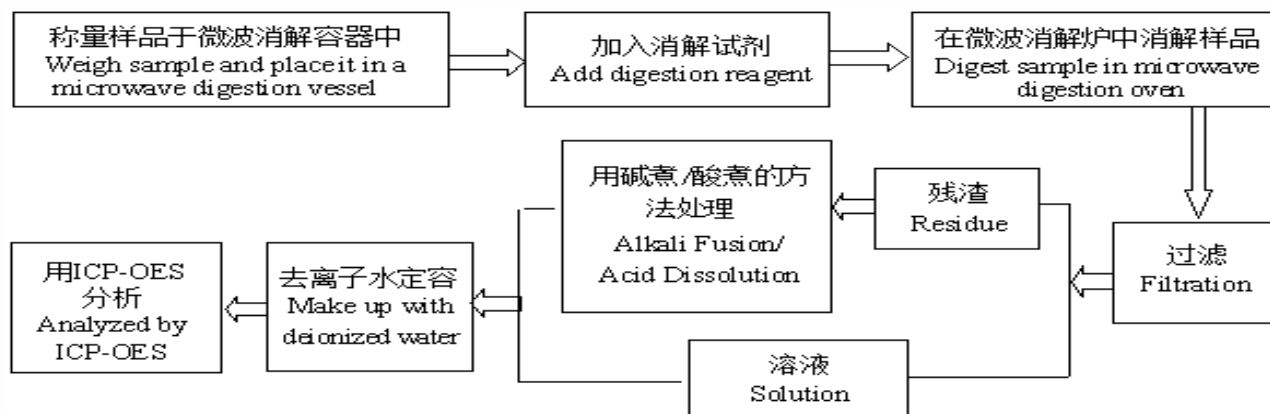
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检测流程 Test Process

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

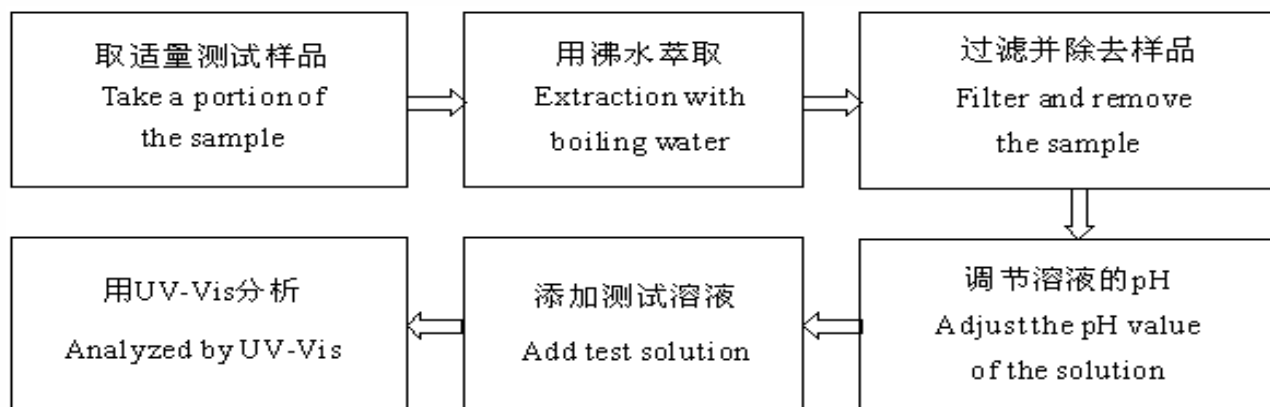


2. 汞 Mercury(Hg)



3. 六价铬 Hexavalent Chromium(Cr(VI))

(1) IEC 62321-7-1:2015

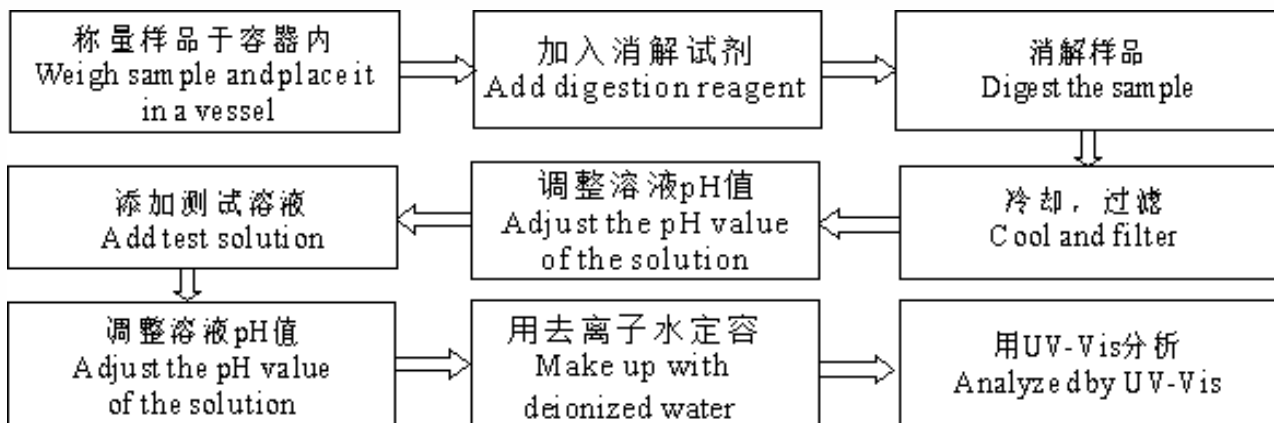


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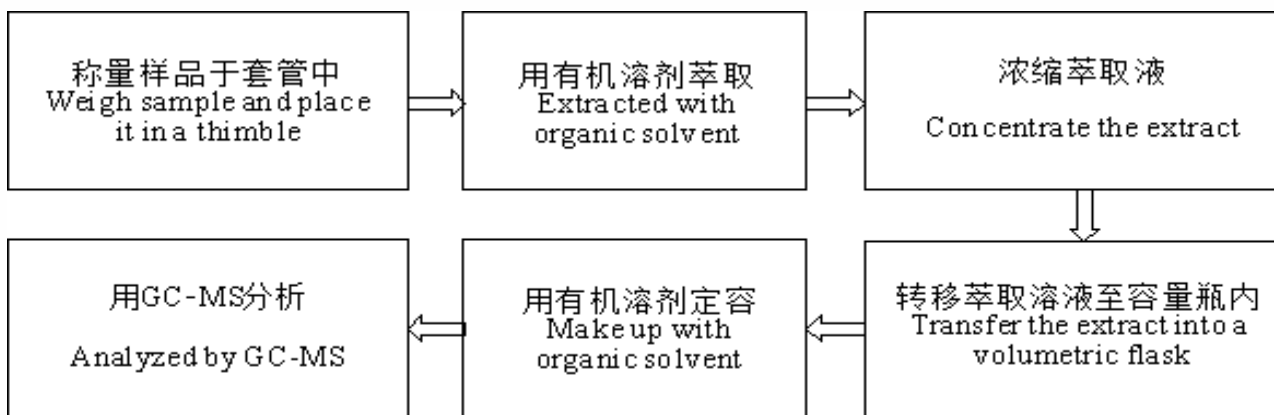
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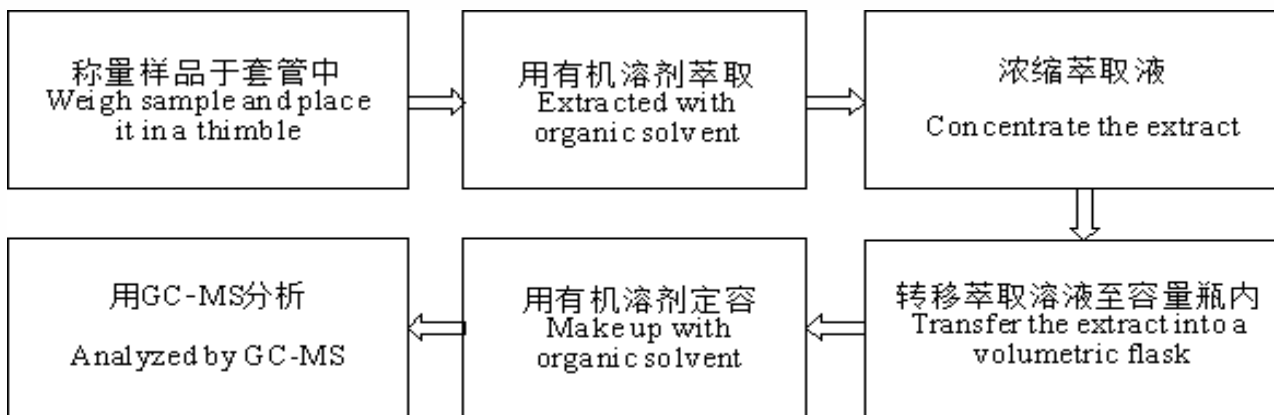
(2) IEC 62321-7-2:2017



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



5. 邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)



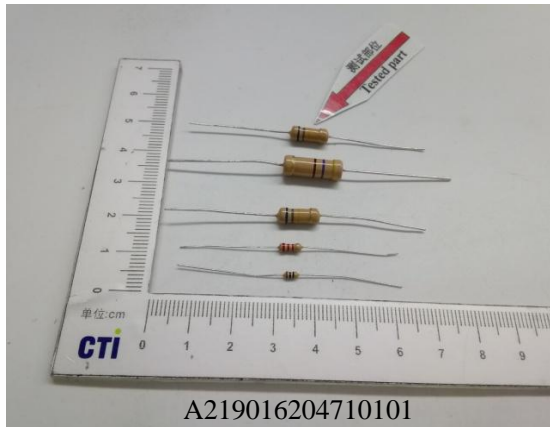
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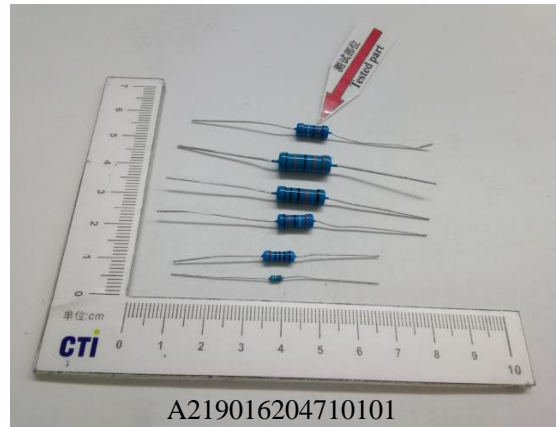
样品图片 Photo(s) of the sample(s)

001



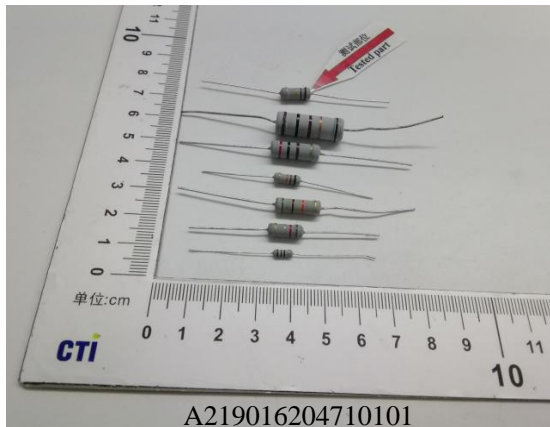
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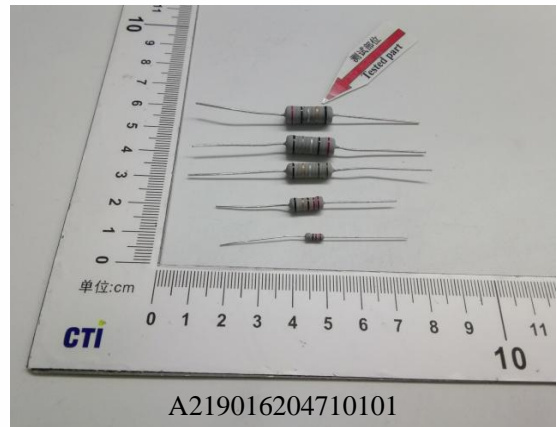
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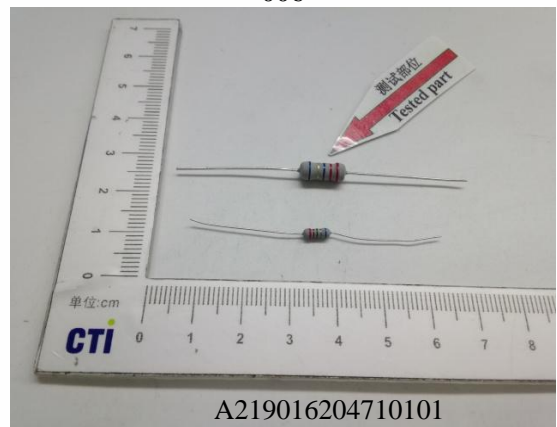
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检测报告 Test Report

报告编号 A21901620471010104E
Report No. A21901620471010104E

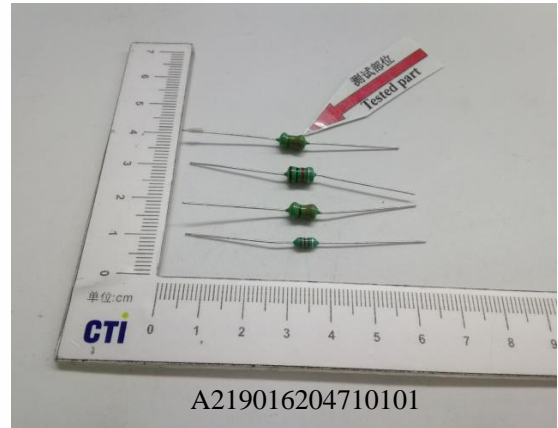
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007



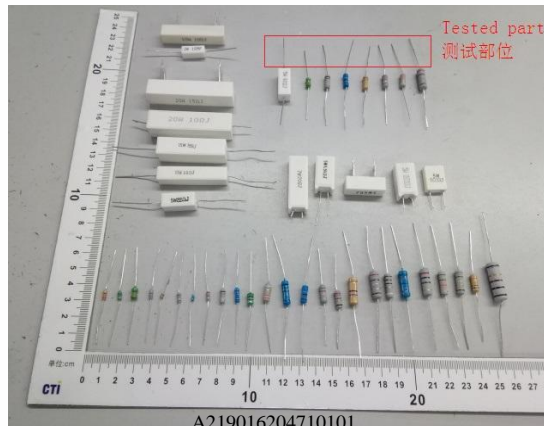
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*** 报告结束 ***

*** End of Report ***

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