

测试报告

No. SHAEC1712072104

日期: 2017年06月13日 第1页,共6页

华鼎集团

浙江省 杭州市曙光路122号世贸中心写字楼 D座

以下测试之样品是由申请者所提供及确认:印刷电路板

SGS工作编号: SP17-020484 - SH
型号: 1217_Gerber_Sing
批号: PHD161286
样品接收日期: 2017年06月09日
测试周期: 2017年06月09日 - 2017年06月13日
测试要求: 根据客户要求测试
测试方法: 请参见下一页
测试结果: 请参见下一页

结论: 基于所送样品进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯(如邻苯二甲酸二丁酯 (DBP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务(上海)有限公司
授权签名

Marry Ma 马广媛
批准签署人

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测试报告

No. SHAEC1712072104

日期: 2017年06月13日 第2页,共6页

测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	SHA17-120721.003	绿色PCB板

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

RoHS 指令2011/65/EU附录II的修正指令(EU) 2015/863

- 测试方法:
- (1) 参考IEC 62321-5:2013, 用ICP-OES测定镉的含量
 - (2) 参考IEC 62321-5:2013, 用ICP-OES测定铅的含量
 - (3) 参考IEC 62321-4:2013, 用ICP-OES测定汞的含量
 - (4) 参考IEC 62321-7-2:2017, 用UV-Vis分析六价铬含量和/或者参考IEC 62321-5:2013, 用ICP-OES测试总铬含量
 - (5) 参考IEC 62321-6:2015, 用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚) 的含量
 - (6) 参考IEC 62321-8:2017, 用GC-MS测定邻苯二甲酸酯的含量

测试项目	限值	单位	MDL	003
镉(Cd)	100	mg/kg	2	ND
铅(Pb)	1000	mg/kg	2	9
汞(Hg)	1000	mg/kg	2	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND
多溴联苯之和(PBBs)	1000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1000	mg/kg	-	ND



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测试项目	限值	单位	MDL	003
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND

备注:

- (1) 最大允许极限值引用自RoHS指令(EU) 2015/863 。
IEC 62321系列等同于 EN 62321 系列
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) 检测的铬(Cr)含量是“ND”，则六价铬(Cr(VI))含量也是“ND”，不需要进行六价铬(Cr(VI))的确认性测试。
- (3) 若铬(Cr)含量超过方法检出限，需要进行六价铬(Cr(VI))的确认性测试。
- (4) 2015年6月4号发表在欧盟官方杂志（官方公报）上的RoHS指令(EU) 2015/863 附录II限值中还包括邻苯二甲酸酯BBP, DBP, DEHP和DIBP。新的指令限制了电子电器产品的每一个均一材质中邻苯二甲酸酯含量不得超过0.1%。
- (5) 2021年7月22号开始，DEHP, BBP, DBP 和 DIBP的限制适用于医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。
- (6) DEHP, BBP, DBP 和 DIBP的限制不适用于2019年7月22日前投放市场的电缆及电子电气产品中用于维修、重复利用、功能更新及容量提升的备用配件以及2021年7月22日前投放市场的医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。
- (7) DEHP、BBP 和 DBP的限制不适用于玩具产品，因为No.1907/2006附录XVII第51条已对玩具产品中的DEHP、BBP 和 DBP含量进行了限制。



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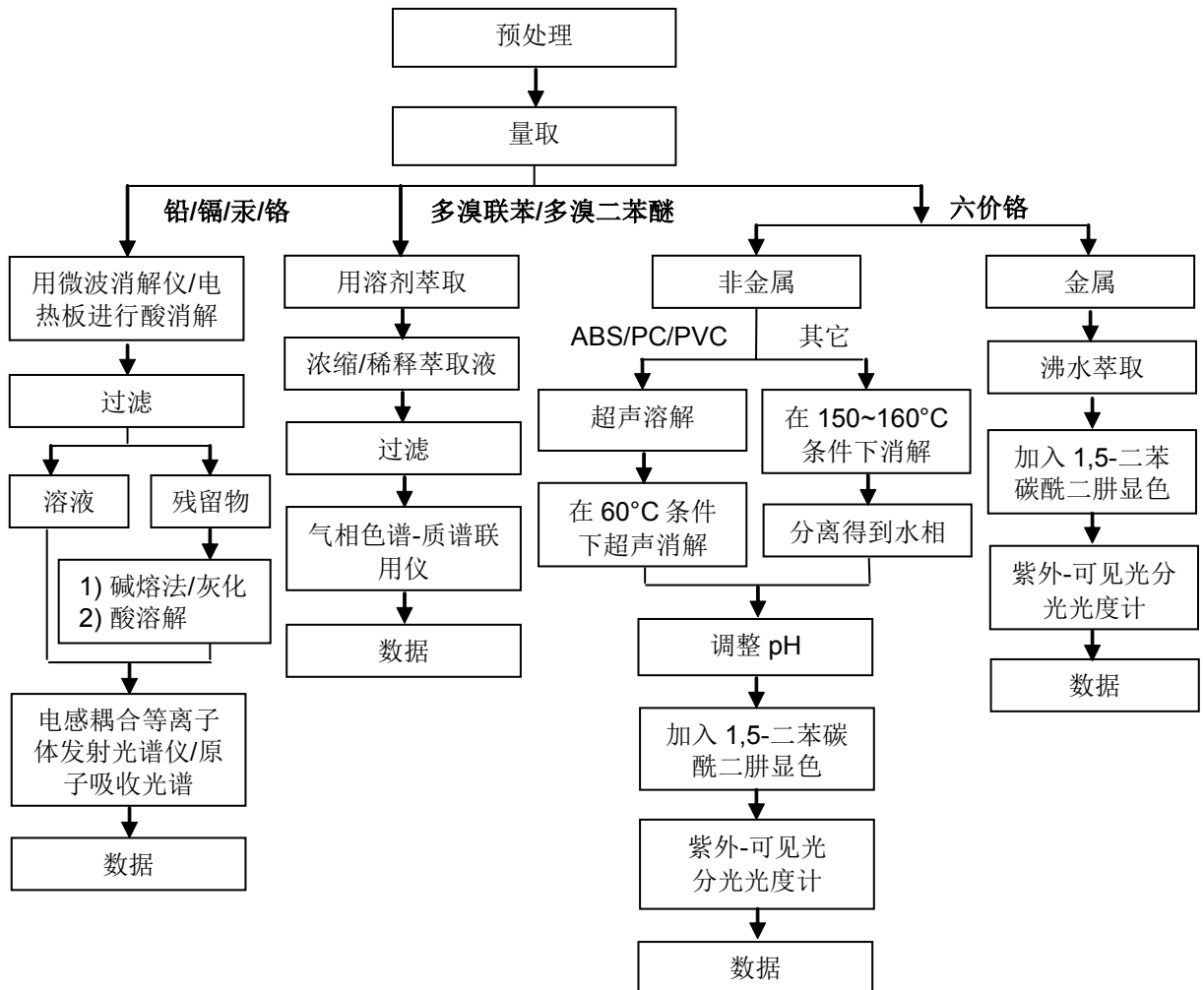
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附件

Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs 测试流程图

- 1) 分析人员: 金叶/徐刚/李振 /宋珂静
- 2) 项目负责人: 施青/黄婷/徐亮/王晓艳
- 3) 样品按照下述流程被完全消解(六价铬和多溴联苯/多溴二苯醚测试除外)。



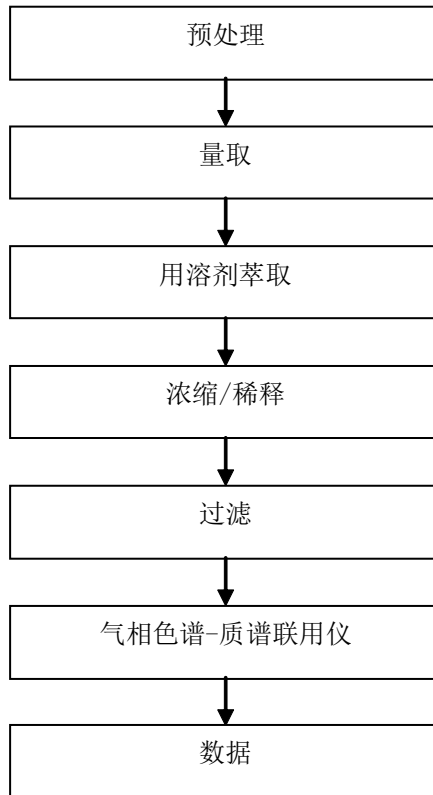
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附件

Phthalates 测试流程图

- 1) 分析人员: 高仰景
- 2) 项目负责人: 黄婷



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