

检测报告

编号: TAOEC2307955114

日期: 2023年11月14日 第1页,共10页

客户名称: 济南晶恒电子有限责任公司
客户地址: 山东省济南市长清区平安街道经十西路13856号

样品名称: GPP芯片
以上样品及信息由客户提供。

SGS工作编号: QDP23-001753 - QD
样品接收日期: 2023年10月30日
检测周期: 2023年10月30日 - 2023年11月07日
检测要求: 根据客户要求检测
检测方法: 请参见下一页
检测结果: 请参见下一页

检测结果概要:

| 检测要求 | 结论 |
|--|-------|
| 欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863- 铅, 汞, 镉, 六价铬, 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸二丁酯 (DBP), 邻苯二甲酸丁苯酯(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) | 符合 |
| 卤素 | 见检测结果 |
| 中链氯化石蜡(MCCP) (C14-C17) | 见检测结果 |
| 四溴双酚-A | 见检测结果 |

通标标准技术服务(青岛)有限公司
授权签名

Zhang Bo, Justin 张波
批准签署人

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检测报告

编号: TAOEC2307955114

日期: 2023年11月14日 第2页,共10页

检测结果:

检测样品描述:

| 样品编号 | SGS样品ID | 描述 |
|------|------------------|------|
| SN1 | TAO23-079551.007 | 棕色芯片 |

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

欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863-铅, 汞, 镉, 六价铬, 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸二丁酯(DBP), 邻苯二甲酸丁基酯(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)

检测方法: 参考IEC 62321-5:2013, IEC 62321-4:2013+AMD1:2017, IEC 62321-7-2:2017, IEC 62321-6:2015和IEC 62321-8:2017, 采用ICP-OES, UV-Vis和GC-MS进行分析.

| 检测项目 | 限值 | 单位 | MDL | 007 |
|----------------|------|-------|-----|--------|
| 镉(Cd) | 100 | mg/kg | 2 | ND |
| 铅(Pb) | 1000 | mg/kg | 2 | 39766▲ |
| 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 |
| 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 |



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编号: TAOEC2307955114

日期: 2023年11月14日 第3页,共10页

| 检测项目 | 限值 | 单位 | MDL | 007 |
|-----------------------|------|-------|-----|-----|
| 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。
- (2) IEC 62321 系列等同于 EN 62321 系列
- (3) 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。
- (4) ▲根据客户提供的声明, 编号007中的铅(Pb)被欧盟RoHS指令2011/65/EU豁免, 相应豁免条文(请以英文原文为准) [ANNEX III 7(c)-I]: 电子电气元件中玻璃或陶瓷材料(电容中陶瓷介质除外)所含的铅, 如压电设备、玻璃或陶瓷基复合元件。
- (5) 铅的检测结果仅供参考。

卤素

检测方法: 参照EN 14582: 2016方法测定, 采用 IC进行分析。

| 检测项目 | 单位 | MDL | 007 |
|-------|-------|-----|-----|
| 氟(F) | mg/kg | 20 | ND |
| 氯(Cl) | mg/kg | 50 | ND |
| 溴(Br) | mg/kg | 50 | ND |
| 碘(I) | mg/kg | 50 | ND |

中链氯化石蜡(MCCP) (C14-C17)

检测方法: 参照ISO 22818:2021方法,采用GC-NCI-MS进行分析。

| 检测项目 | 单位 | MDL | 007 |
|--|-------|-----|-----|
| 中链氯化石蜡(MCCP) (C ₁₄ -C ₁₇) | mg/kg | 50 | ND |



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四溴双酚-A

检测方法: 参照US EPA 3550C: 2007- 超声萃取, 采用LC-MS进行分析.

| 检测项目 | 单位 | MDL | 007 |
|--------|-------|-----|-----|
| 四溴双酚-A | mg/kg | 10 | ND |

除非另有说明, 参照ILAC-G8:09/2019, 使用简单接受 ($w=0$) 的二元判定规则进行符合性判定。
除非另有说明, 此报告结果仅对检测的样品负责。本报告未经本公司书面许可, 不可部分复制。
检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的, 仅供内部参考。

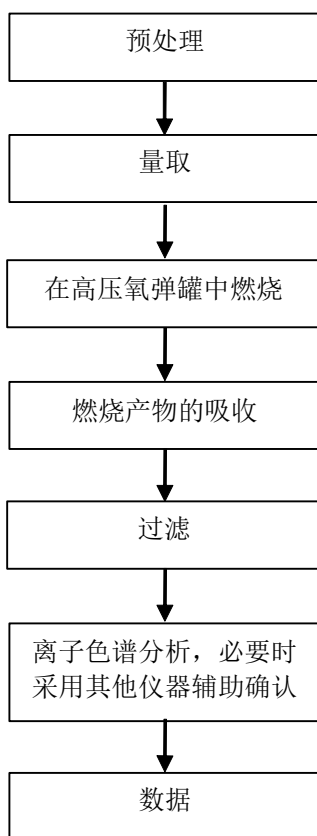


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附件

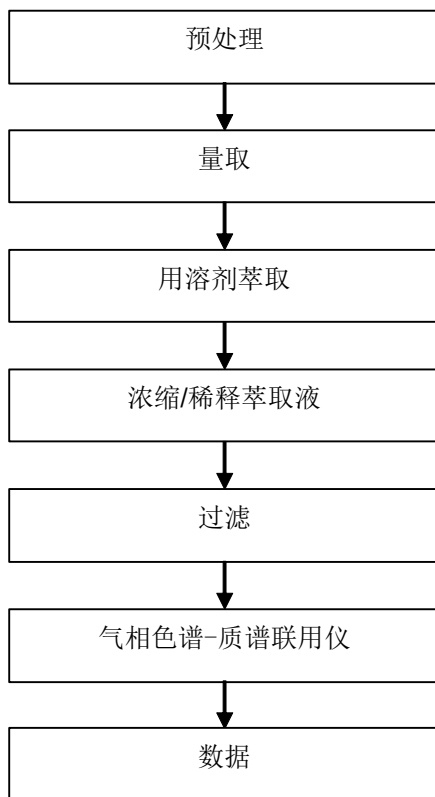
卤素检测流程图



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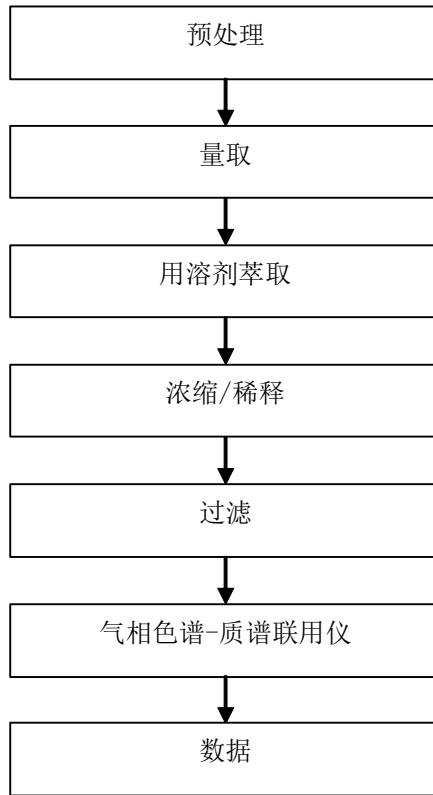
PBBs/PBDEs 检测流程图



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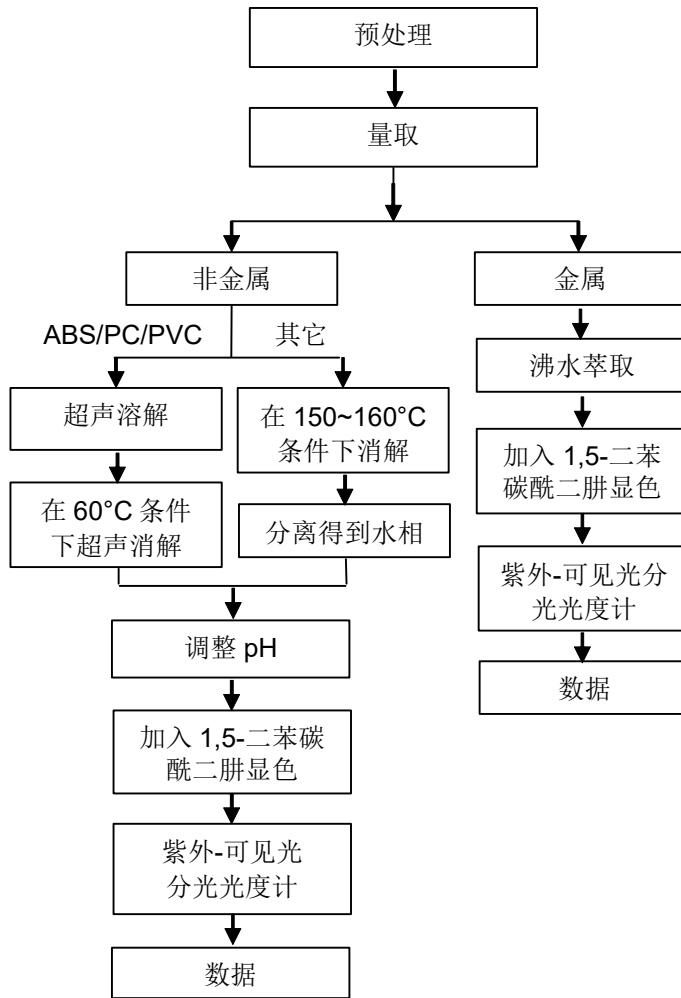
Phthalates 检测流程图



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六价铬检测流程图

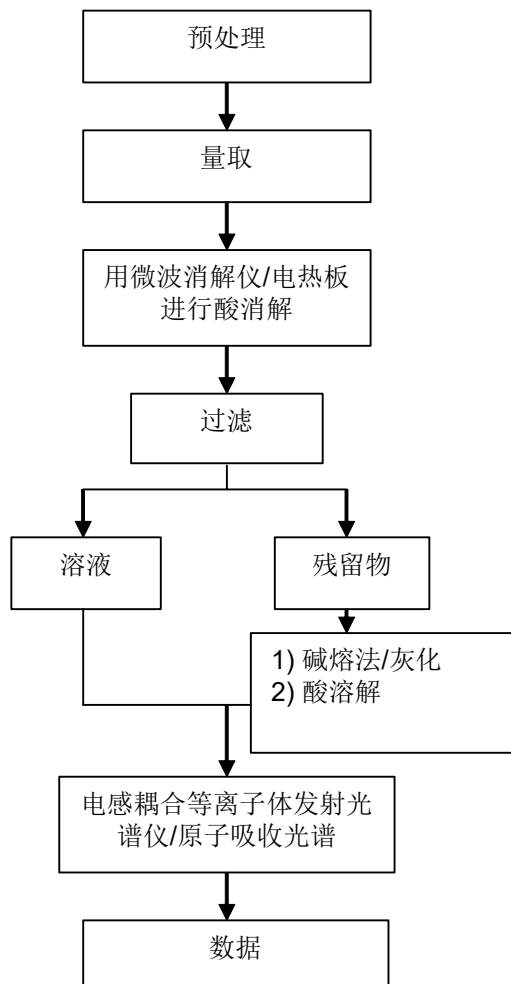


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元素(IEC62321) 检测流程图

1)样品按下述流程被完全消解



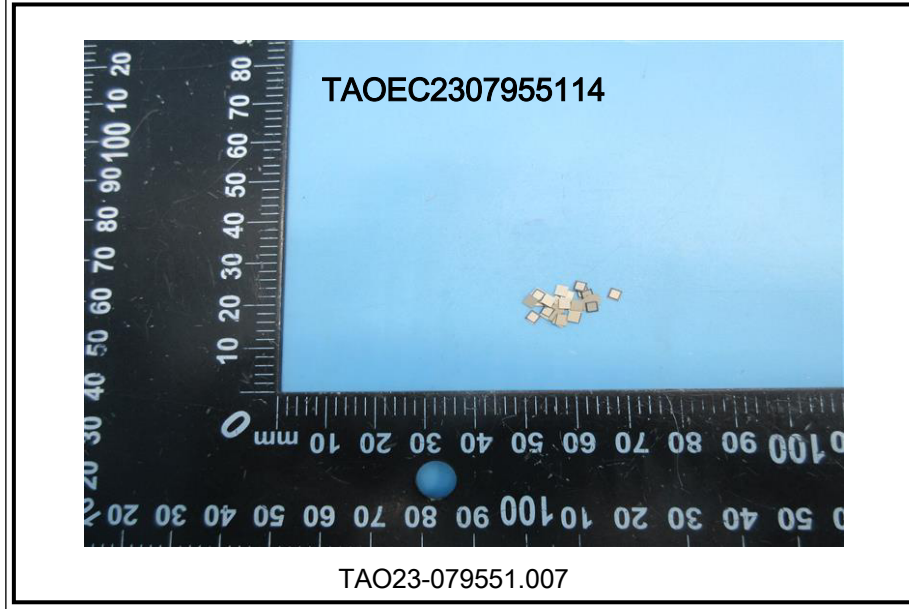
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