

检测报告 编号: SHAEC24013148702 日期: 2024年07月02日 第1页,共13页

客户名称: 捷捷半导体有限公司

客户地址: 南通市苏通科技产业园井冈山路6号

AKS 样品名称: 型号: **AKS**

客户参考信息: MOV, AK, TPS

以上样品及信息由客户提供。

SGS 工作编号: TIC1020240614114205SDY6

样品接收时间: 2024年06月18日

2024年06月18日~2024年07月02日 检测周期:

检测要求: 根据客户要求检测。

检测方法: 见后续页。 检测结果: 见后续页。

| 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 (PBB)、多溴二苯醚 (PBDE)、邻苯二甲酸二(2-乙基已基)酯 (DEHP)、邻苯二甲酸丁苄酯 (BBP)、邻苯二甲酸二丁酯 (DBP)和邻苯二甲酸二异丁酯 (DIBP) | 符合 |
| 欧盟 RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863-铅、汞、镉和六价铬 | 符合 |
| 元素 | 见检测结果 |
| 卤素 | 见检测结果 |
| 聚氯乙烯 (PVC) | 见检测结果 |

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Dora Hu 胡敏 批准签署人





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检测结果:

检测部件外观描述:

| 样品序号 | 样品编号 | SGS 样品 ID | 样品描述 |
|------|------|-------------------------|--------|
| SN1 | A1 | SHA24-0131487-0001.C001 | 蓝色涂层 |
| SN2 | A2 | SHA24-0131487-0001.C002 | 蓝色本体 |
| SN3 | А3 | SHA24-0131487-0001.C003 | 银色金属引脚 |

备注:

- (1) 1 mg/kg = 1 ppm = 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 (PBB)、多溴 二苯醚 (PBDE)、邻苯二甲酸二(2-乙基已基)酯 (DEHP)、邻苯二甲酸丁苄酯 (BBP)、邻苯二甲酸二丁酯 (DBP)和邻苯二甲酸二异丁酯 (DIBP)

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

| 检测项目 | 限值 | 单位 | MDL | A2 |
|------------------|------|-------|-----|--------|
| 铅 (Pb) | 1000 | mg/kg | 2 | 96487▲ |
| 汞 (Hg) | 1000 | mg/kg | 2 | ND |
| 镉 (Cd) | 100 | mg/kg | 2 | ND |
| 六价铬 (Cr(VI)) | 1000 | mg/kg | 8 | ND |
| 多溴联苯之和 (PBB) | 1000 | mg/kg | - | ND |
| 一溴联苯 (MonoBB) | - | mg/kg | 5 | ND |
| 二溴联苯 (DiBB) | - | mg/kg | 5 | ND |
| 三溴联苯 (TriBB) | - | mg/kg | 5 | ND |
| 四溴联苯 (TetraBB) | - | mg/kg | 5 | ND |
| 五溴联苯 (PentaBB) | - | mg/kg | 5 | ND |
| 六溴联苯 (HexaBB) | - | mg/kg | 5 | ND |
| 七溴联苯 (HeptaBB) | - | mg/kg | 5 | ND |
| 八溴联苯 (OctaBB) | - | mg/kg | 5 | ND |
| 九溴联苯 (NonaBB) | - | mg/kg | 5 | ND |
| 十溴联苯 (DecaBB) | - | mg/kg | 5 | ND |
| 多溴二苯醚之和 (PBDE) | 1000 | mg/kg | - | ND |
| 一溴二苯醚 (MonoBDE) | - | mg/kg | 5 | ND |
| 二溴二苯醚 (DiBDE) | - | mg/kg | 5 | ND |
| 三溴二苯醚 (TriBDE) | - | mg/kg | 5 | ND |
| 四溴二苯醚 (TetraBDE) | - | mg/kg | 5 | ND |
| 五溴二苯醚 (PentaBDE) | - | mg/kg | 5 | ND |



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| 检测项目 | 限值 | 单位 | MDL | A2 |
|------------------------|------|-------|-----|----|
| 六溴二苯醚 (HexaBDE) | - | mg/kg | 5 | ND |
| 七溴二苯醚 (HeptaBDE) | - | mg/kg | 5 | ND |
| 八溴二苯醚 (OctaBDE) | - | mg/kg | 5 | ND |
| 九溴二苯醚 (NonaBDE) | - | mg/kg | 5 | ND |
| 十溴二苯醚 (DecaBDE) | - | mg/kg | 5 | ND |
| 邻苯二甲酸二(2-乙基己基)酯 (DEHP) | 1000 | mg/kg | 50 | ND |
| 邻苯二甲酸丁苄酯 (BBP) | 1000 | mg/kg | 50 | ND |
| 邻苯二甲酸二丁酯 (DBP) | 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,样品中的铅(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 || 7(a)|: 高熔点型焊料中的铅(即铅含量等于或大于 85%的铅基合金焊料)。 更多豁免相关信息,可以从以下链接获取:

https://rohs.sgsonline.com.cn/PDFLinks/zh-cn/RSTS-TP-037%20RoHS%20Exemption%20%28CN%29.pdf (5) 铅: 检测结果仅供参考。

欧盟 RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863-铅、汞、镉和六价铬

检测方法: 参考 IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013 和 IEC 62321-7-1:2015, 采用 ICP-OES/AAS和UV-Vis进行分析。

| 检测项目 | 限值 | 单位 | MDL | A3 |
|---------------|------|--------|------|----|
| 铅 (Pb) | 1000 | mg/kg | 2 | 7 |
| 汞 (Hg) | 1000 | mg/kg | 2 | ND |
| 镉 (Cd) | 100 | mg/kg | 2 | ND |
| 六价铬 (Cr(VI))▼ | - | μg/cm² | 0.10 | 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。
- a. 当六价铬的浓度高于0.13 μg/cm²时,样品为阳性,即含有六价铬;
 - b. 当六价铬的浓度为ND (低于0.10 μg/cm²) 时,样品为阴性,即未检测到六价铬;
 - c. 当六价铬的浓度介于0.10 µg/cm²与0.13 µg/cm²之间时,无法直接判定是否检测到六价铬,因不 同个体的样品表面差异可能会影响测定结果。

由于未获知样品的存储条件和生产日期,样品的六价铬检测结果仅能代表检测时样品含六价铬的状态。

元素

检测方法: 参考 US EPA 3052:1996, 采用 ICP-OES/AAS 进行分析。



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| 检测项目 | 单位 | MDL | A2 |
|-------|-------|-----|----|
| 铍(Be) | mg/kg | 5 | ND |
| 锑(Sb) | mg/kg | 10 | ND |

卤素

检测方法: 参考 EN 14582:2016, 采用 IC 进行分析。

| 检测项目 | 单位 | MDL | A1 |
|--------|-------|-----|-----|
| 氟 (F) | mg/kg | 20 | ND |
| 氯 (CI) | mg/kg | 50 | 305 |
| 溴 (Br) | mg/kg | 50 | ND |
| 碘 (I) | mg/kg | 50 | ND |

聚氯乙烯 (PVC)

检测方法: 参考 SGS 内部方法,采用 FTIR/HATR 进行分析。

| 检测项目 | A1 |
|------------|----|
| 聚氯乙烯 (PVC) | 阴性 |

备注:

(1) 阴性=未检测到, 阳性= 已检测到。

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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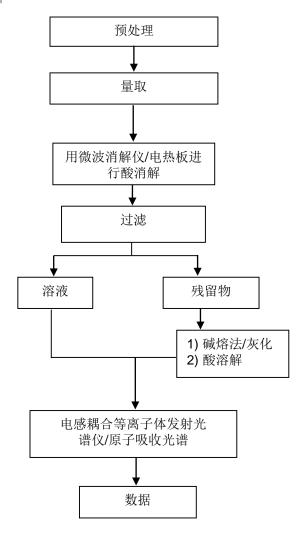
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附件

元素检测流程图

样品按照下述流程被完全消解





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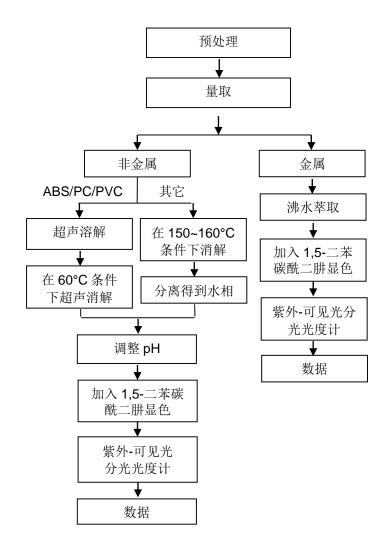


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六价铬检测流程图





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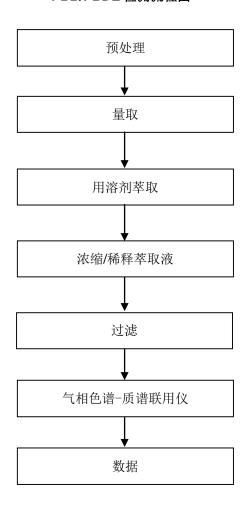
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PBB/PBDE 检测流程图





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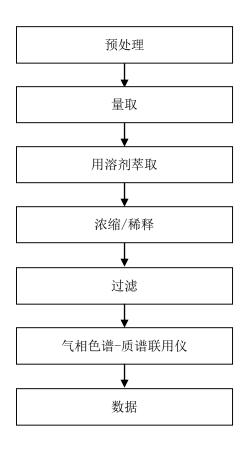
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附件

Phthalates 检测流程图





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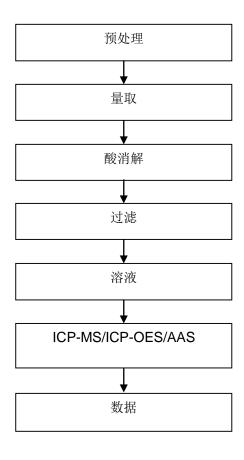
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元素检测流程图





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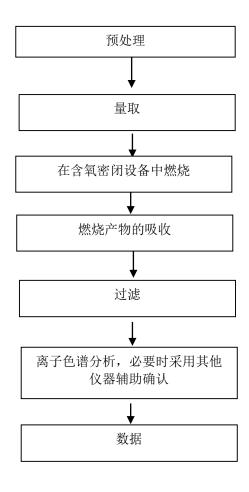
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附件

卤素检测流程图





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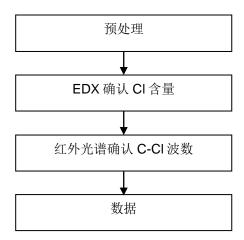


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PVC 检测流程图





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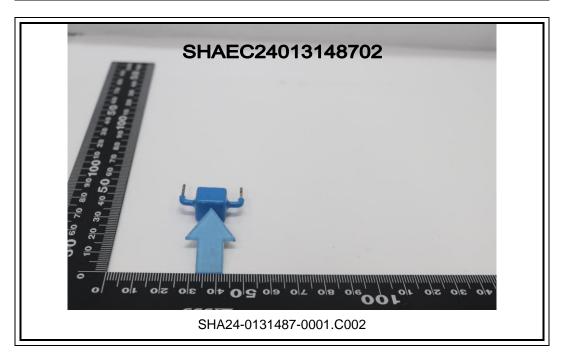
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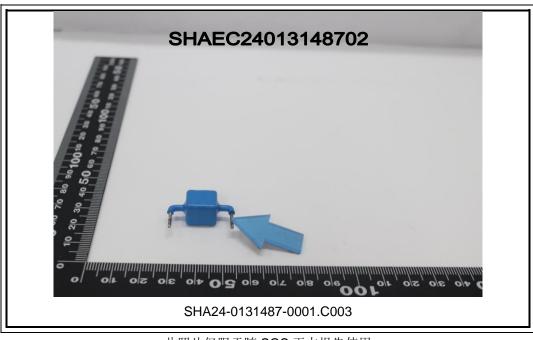
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