

检测报告

编号: CANEC25030712708

日期: 2025 年 12 月 18 日

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客户名称: 扬州扬杰电子科技股份有限公司

客户地址: 江苏省扬州市邗江区维扬经济开发区新甘泉西路 68 号

样品名称: 小信号 (不含铅)

客户参考信息: 1.锡球; 7.无卤塑封料 2; 27.铜线; 28.镀金钎铜线; 29.镀钎铜线; 30.银浆;
31.框架 (铜铁银); 32.框架 (铜锡银); 33.框架 (铁镍); 34.无卤塑封料
5; 36.无卤塑封料 6; 37.无卤塑封料 7; 41.无卤塑封料 11; 42.框架 (铜银) 1;
44.框架 (铜银) 2; 49 无卤塑封料 14

以上样品及信息由客户提供。

SGS 工作编号: GZP25-034879

参考编号: SHP25-041836

样品接收时间: 2025 年 12 月 09 日

检测周期: 2025 年 12 月 09 日 ~ 2025 年 12 月 15 日

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-乙基己基)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

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史丽兰

Violet Shi 史丽兰
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	CAN25-0307127-0001.C001	银色金属
SN2	A7	CAN25-0307127-0001.C007	灰色固体
SN3	A27	CAN25-0307127-0001.C027	铜色金属线
SN4	A28	CAN25-0307127-0001.C028	银灰色金属丝
SN5	A29	CAN25-0307127-0001.C029	银灰色金属丝
SN6	A30	CAN25-0307127-0001.C030	银色膏体
SN7	A31	CAN25-0307127-0001.C031	铜色/银色金属
SN8	A32	CAN25-0307127-0001.C032	铜色/银色金属
SN9	A33	CAN25-0307127-0001.C033	银色金属
SN10	A34	CAN25-0307127-0001.C034	灰色固体
SN11	A36	CAN25-0307127-0001.C036	灰色固体
SN12	A37	CAN25-0307127-0001.C037	灰色固体
SN13	A41	CAN25-0307127-0001.C041	灰色固体
SN14	A42	CAN25-0307127-0001.C042	铜色金属
SN15	A44	CAN25-0307127-0001.C044	铜色/银色金属
SN16	A49	CAN25-0307127-0001.C049	灰色固体

备注:

- (1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = 方法检出限
(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-乙基己基)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 和 IEC 62321-12:2023, 采用 ICP-OES/AAS, UV-Vis 和 GC-MS 进行分析。



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检测项目	限值	单位	MDL	A7	A34	A36
铅 (Pb)	1000	mg/kg	2	ND	ND	ND
汞 (Hg)	1000	mg/kg	2	ND	ND	ND
镉 (Cd)	100	mg/kg	2	ND	ND	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND	ND	ND
多溴联苯之和 (PBB)	1000	mg/kg	-	ND	ND	ND
一溴联苯 (MonoBB)	-	mg/kg	25	ND	ND	ND
二溴联苯 (DiBB)	-	mg/kg	25	ND	ND	ND
三溴联苯 (TriBB)	-	mg/kg	25	ND	ND	ND
四溴联苯 (TetraBB)	-	mg/kg	25	ND	ND	ND
五溴联苯 (PentaBB)	-	mg/kg	25	ND	ND	ND
六溴联苯 (HexaBB)	-	mg/kg	25	ND	ND	ND
七溴联苯 (HeptaBB)	-	mg/kg	25	ND	ND	ND
八溴联苯 (OctaBB)	-	mg/kg	25	ND	ND	ND
九溴联苯 (NonaBB)	-	mg/kg	25	ND	ND	ND
十溴联苯 (DecaBB)	-	mg/kg	25	ND	ND	ND
多溴二苯醚之和 (PBDE)	1000	mg/kg	-	ND	ND	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	25	ND	ND	ND
二溴二苯醚 (DiBDE)	-	mg/kg	25	ND	ND	ND
三溴二苯醚 (TriBDE)	-	mg/kg	25	ND	ND	ND
四溴二苯醚 (TetraBDE)	-	mg/kg	25	ND	ND	ND
五溴二苯醚 (PentaBDE)	-	mg/kg	25	ND	ND	ND
六溴二苯醚 (HexaBDE)	-	mg/kg	25	ND	ND	ND
七溴二苯醚 (HeptaBDE)	-	mg/kg	25	ND	ND	ND
八溴二苯醚 (OctaBDE)	-	mg/kg	25	ND	ND	ND
九溴二苯醚 (NonaBDE)	-	mg/kg	25	ND	ND	ND
十溴二苯醚 (DecaBDE)	-	mg/kg	25	ND	ND	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND	ND	ND

检测项目	限值	单位	MDL	A37	A41	A49
铅 (Pb)	1000	mg/kg	2	ND	ND	ND
汞 (Hg)	1000	mg/kg	2	ND	ND	ND
镉 (Cd)	100	mg/kg	2	ND	ND	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND	ND	ND
多溴联苯之和 (PBB)	1000	mg/kg	-	ND	ND	ND
一溴联苯 (MonoBB)	-	mg/kg	25	ND	ND	ND
二溴联苯 (DiBB)	-	mg/kg	25	ND	ND	ND
三溴联苯 (TriBB)	-	mg/kg	25	ND	ND	ND
四溴联苯 (TetraBB)	-	mg/kg	25	ND	ND	ND
五溴联苯 (PentaBB)	-	mg/kg	25	ND	ND	ND
六溴联苯 (HexaBB)	-	mg/kg	25	ND	ND	ND

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检测项目	限值	单位	MDL	A37	A41	A49
七溴联苯 (HeptaBB)	-	mg/kg	25	ND	ND	ND
八溴联苯 (OctaBB)	-	mg/kg	25	ND	ND	ND
九溴联苯 (NonaBB)	-	mg/kg	25	ND	ND	ND
十溴联苯 (DecaBB)	-	mg/kg	25	ND	ND	ND
多溴二苯醚之和 (PBDE)	1000	mg/kg	-	ND	ND	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	25	ND	ND	ND
二溴二苯醚 (DiBDE)	-	mg/kg	25	ND	ND	ND
三溴二苯醚 (TriBDE)	-	mg/kg	25	ND	ND	ND
四溴二苯醚 (TetraBDE)	-	mg/kg	25	ND	ND	ND
五溴二苯醚 (PentaBDE)	-	mg/kg	25	ND	ND	ND
六溴二苯醚 (HexaBDE)	-	mg/kg	25	ND	ND	ND
七溴二苯醚 (HeptaBDE)	-	mg/kg	25	ND	ND	ND
八溴二苯醚 (OctaBDE)	-	mg/kg	25	ND	ND	ND
九溴二苯醚 (NonaBDE)	-	mg/kg	25	ND	ND	ND
十溴二苯醚 (DecaBDE)	-	mg/kg	25	ND	ND	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND	ND	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。

检测方法: 参考 IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015 和 IEC 62321-12:2023, 采用 ICP-OES/AAS, UV-Vis 和 GC-MS 进行分析。

检测项目	限值	单位	MDL	A1	A27	A28
铅 (Pb)	1000	mg/kg	2	37	9	ND
汞 (Hg)	1000	mg/kg	2	ND	ND	ND
镉 (Cd)	100	mg/kg	2	ND	ND	ND
六价铬 (Cr(VI))▼	-	µg/cm ²	0.10	ND	ND	ND
多溴联苯之和 (PBB)	1000	mg/kg	-	ND	ND	ND
一溴联苯 (MonoBB)	-	mg/kg	25	ND	ND	ND
二溴联苯 (DiBB)	-	mg/kg	25	ND	ND	ND
三溴联苯 (TriBB)	-	mg/kg	25	ND	ND	ND
四溴联苯 (TetraBB)	-	mg/kg	25	ND	ND	ND
五溴联苯 (PentaBB)	-	mg/kg	25	ND	ND	ND
六溴联苯 (HexaBB)	-	mg/kg	25	ND	ND	ND
七溴联苯 (HeptaBB)	-	mg/kg	25	ND	ND	ND
八溴联苯 (OctaBB)	-	mg/kg	25	ND	ND	ND



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检测项目	限值	单位	MDL	A1	A27	A28
九溴联苯 (NonaBB)	-	mg/kg	25	ND	ND	ND
十溴联苯 (DecaBB)	-	mg/kg	25	ND	ND	ND
多溴二苯醚之和 (PBDE)	1000	mg/kg	-	ND	ND	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	25	ND	ND	ND
二溴二苯醚 (DiBDE)	-	mg/kg	25	ND	ND	ND
三溴二苯醚 (TriBDE)	-	mg/kg	25	ND	ND	ND
四溴二苯醚 (TetraBDE)	-	mg/kg	25	ND	ND	ND
五溴二苯醚 (PentaBDE)	-	mg/kg	25	ND	ND	ND
六溴二苯醚 (HexaBDE)	-	mg/kg	25	ND	ND	ND
七溴二苯醚 (HeptaBDE)	-	mg/kg	25	ND	ND	ND
八溴二苯醚 (OctaBDE)	-	mg/kg	25	ND	ND	ND
九溴二苯醚 (NonaBDE)	-	mg/kg	25	ND	ND	ND
十溴二苯醚 (DecaBDE)	-	mg/kg	25	ND	ND	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND	ND	ND

检测项目	限值	单位	MDL	A29	A31	A32
铅 (Pb)	1000	mg/kg	2	ND	11	9
汞 (Hg)	1000	mg/kg	2	ND	ND	ND
镉 (Cd)	100	mg/kg	2	ND	ND	ND
六价铬 (Cr(VI))▼	-	µg/cm ²	0.10	ND	ND	ND
多溴联苯之和 (PBB)	1000	mg/kg	-	ND	ND	ND
一溴联苯 (MonoBB)	-	mg/kg	25	ND	ND	ND
二溴联苯 (DiBB)	-	mg/kg	25	ND	ND	ND
三溴联苯 (TriBB)	-	mg/kg	25	ND	ND	ND
四溴联苯 (TetraBB)	-	mg/kg	25	ND	ND	ND
五溴联苯 (PentaBB)	-	mg/kg	25	ND	ND	ND
六溴联苯 (HexaBB)	-	mg/kg	25	ND	ND	ND
七溴联苯 (HeptaBB)	-	mg/kg	25	ND	ND	ND
八溴联苯 (OctaBB)	-	mg/kg	25	ND	ND	ND
九溴联苯 (NonaBB)	-	mg/kg	25	ND	ND	ND
十溴联苯 (DecaBB)	-	mg/kg	25	ND	ND	ND
多溴二苯醚之和 (PBDE)	1000	mg/kg	-	ND	ND	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	25	ND	ND	ND
二溴二苯醚 (DiBDE)	-	mg/kg	25	ND	ND	ND
三溴二苯醚 (TriBDE)	-	mg/kg	25	ND	ND	ND
四溴二苯醚 (TetraBDE)	-	mg/kg	25	ND	ND	ND
五溴二苯醚 (PentaBDE)	-	mg/kg	25	ND	ND	ND
六溴二苯醚 (HexaBDE)	-	mg/kg	25	ND	ND	ND
七溴二苯醚 (HeptaBDE)	-	mg/kg	25	ND	ND	ND
八溴二苯醚 (OctaBDE)	-	mg/kg	25	ND	ND	ND



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检测项目	限值	单位	MDL	A29	A31	A32
九溴二苯醚 (NonaBDE)	-	mg/kg	25	ND	ND	ND
十溴二苯醚 (DecaBDE)	-	mg/kg	25	ND	ND	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND	ND	ND

检测项目	限值	单位	MDL	A33	A42	A44
铅 (Pb)	1000	mg/kg	2	ND	12	ND
汞 (Hg)	1000	mg/kg	2	ND	ND	ND
镉 (Cd)	100	mg/kg	2	ND	ND	ND
六价铬 (Cr(VI))▼	-	µg/cm ²	0.10	ND	ND	ND
多溴联苯之和 (PBB)	1000	mg/kg	-	ND	ND	ND
一溴联苯 (MonoBB)	-	mg/kg	25	ND	ND	ND
二溴联苯 (DiBB)	-	mg/kg	25	ND	ND	ND
三溴联苯 (TriBB)	-	mg/kg	25	ND	ND	ND
四溴联苯 (TetraBB)	-	mg/kg	25	ND	ND	ND
五溴联苯 (PentaBB)	-	mg/kg	25	ND	ND	ND
六溴联苯 (HexaBB)	-	mg/kg	25	ND	ND	ND
七溴联苯 (HeptaBB)	-	mg/kg	25	ND	ND	ND
八溴联苯 (OctaBB)	-	mg/kg	25	ND	ND	ND
九溴联苯 (NonaBB)	-	mg/kg	25	ND	ND	ND
十溴联苯 (DecaBB)	-	mg/kg	25	ND	ND	ND
多溴二苯醚之和 (PBDE)	1000	mg/kg	-	ND	ND	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	25	ND	ND	ND
二溴二苯醚 (DiBDE)	-	mg/kg	25	ND	ND	ND
三溴二苯醚 (TriBDE)	-	mg/kg	25	ND	ND	ND
四溴二苯醚 (TetraBDE)	-	mg/kg	25	ND	ND	ND
五溴二苯醚 (PentaBDE)	-	mg/kg	25	ND	ND	ND
六溴二苯醚 (HexaBDE)	-	mg/kg	25	ND	ND	ND
七溴二苯醚 (HeptaBDE)	-	mg/kg	25	ND	ND	ND
八溴二苯醚 (OctaBDE)	-	mg/kg	25	ND	ND	ND
九溴二苯醚 (NonaBDE)	-	mg/kg	25	ND	ND	ND
十溴二苯醚 (DecaBDE)	-	mg/kg	25	ND	ND	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND	ND	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) ▼ = a. 当六价格的浓度高于 0.13 µg/cm² 时, 样品为阳性, 即含有六价格;



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检测报告

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- b. 当六价铬的浓度为 ND (低于 0.10 $\mu\text{g}/\text{cm}^2$) 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 $\mu\text{g}/\text{cm}^2$ 与 0.13 $\mu\text{g}/\text{cm}^2$ 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。
- (4) PBB/PBDE, DBP, BBP, DEHP, DIBP 不在 CNAS 认可范围内。

检测方法: 参考 IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 和 IEC 62321-12:2023, 采用 ICP-OES/AAS, UV-Vis 和 GC-MS 进行分析。

检测项目	限值	单位	MDL	A30
铅 (Pb)	1000	mg/kg	2	ND
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	25	ND
二溴联苯 (DiBB)	-	mg/kg	25	ND
三溴联苯 (TriBB)	-	mg/kg	25	ND
四溴联苯 (TetraBB)	-	mg/kg	25	ND
五溴联苯 (PentaBB)	-	mg/kg	25	ND
六溴联苯 (HexaBB)	-	mg/kg	25	ND
七溴联苯 (HeptaBB)	-	mg/kg	25	ND
八溴联苯 (OctaBB)	-	mg/kg	25	ND
九溴联苯 (NonaBB)	-	mg/kg	25	ND
十溴联苯 (DecaBB)	-	mg/kg	25	ND
多溴二苯醚之和 (PBDE)	1000	mg/kg	-	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	25	ND
二溴二苯醚 (DiBDE)	-	mg/kg	25	ND
三溴二苯醚 (TriBDE)	-	mg/kg	25	ND
四溴二苯醚 (TetraBDE)	-	mg/kg	25	ND
五溴二苯醚 (PentaBDE)	-	mg/kg	25	ND
六溴二苯醚 (HexaBDE)	-	mg/kg	25	ND
七溴二苯醚 (HeptaBDE)	-	mg/kg	25	ND
八溴二苯醚 (OctaBDE)	-	mg/kg	25	ND
九溴二苯醚 (NonaBDE)	-	mg/kg	25	ND
十溴二苯醚 (DecaBDE)	-	mg/kg	25	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。



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(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。

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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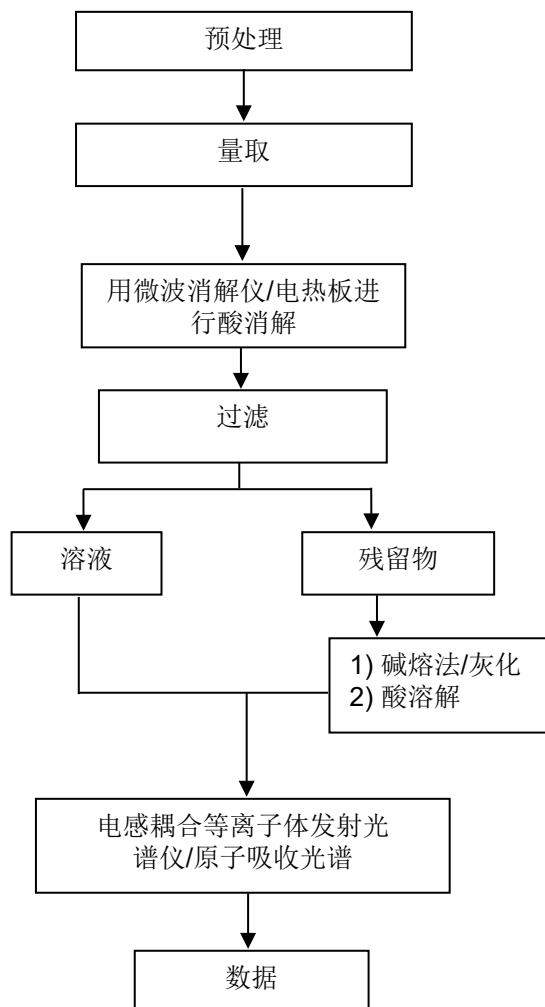
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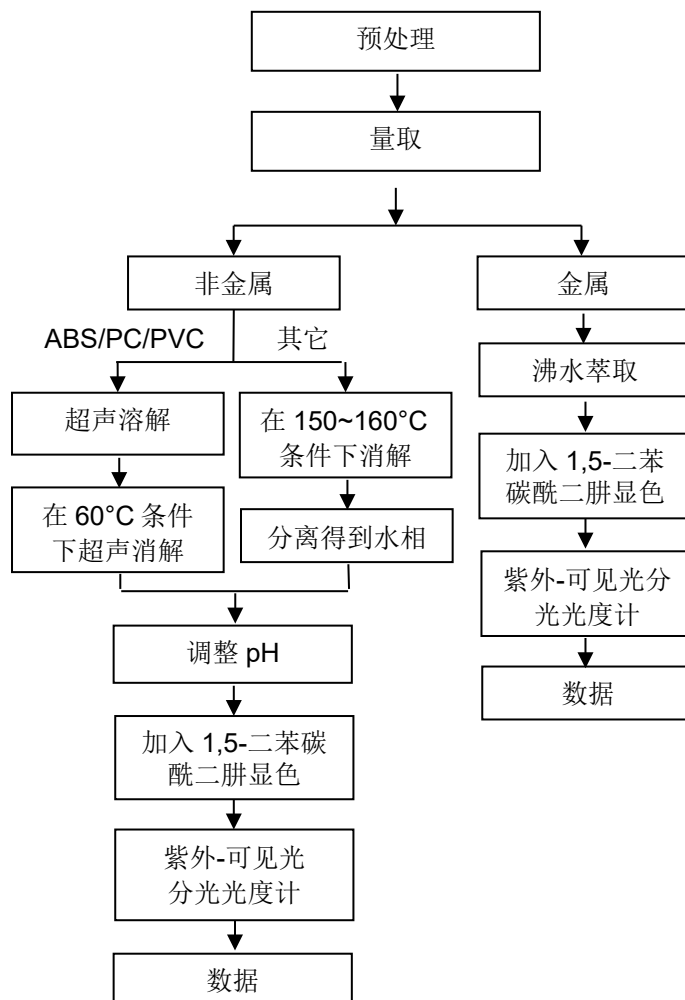
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元素检测流程图

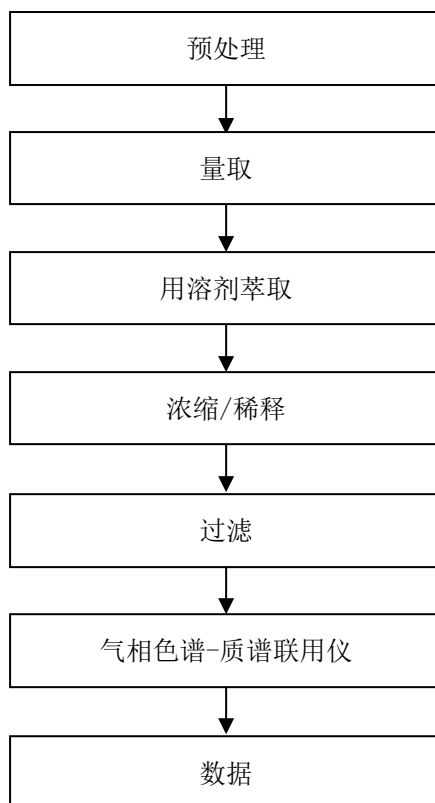
样品按照下述流程被完全消解



六价铬检测流程图



PBB(s)/PBDE(s)/Phthalates 检测流程图



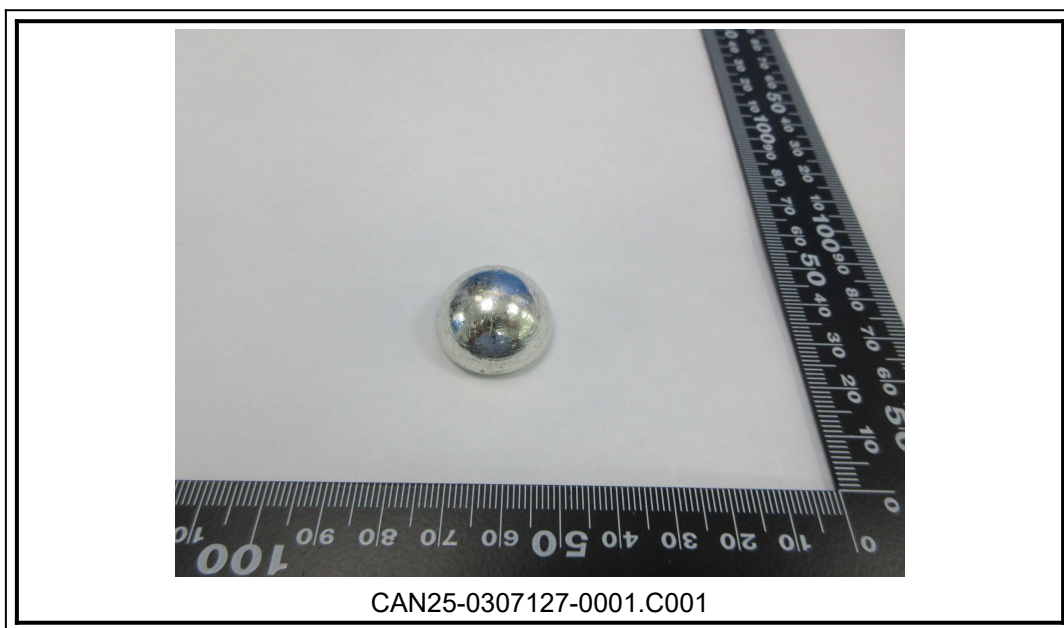
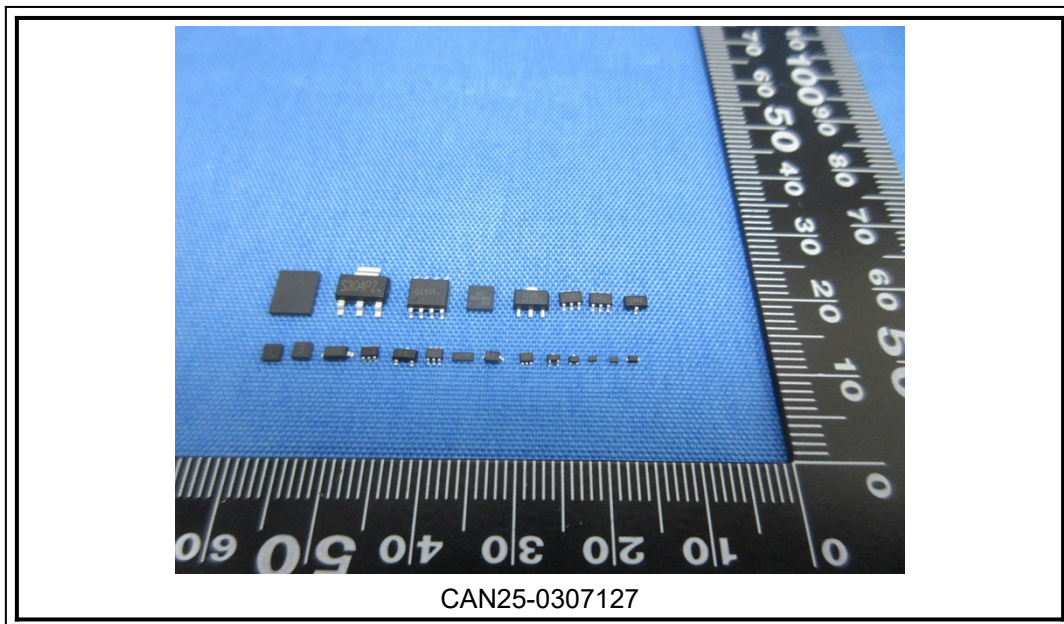
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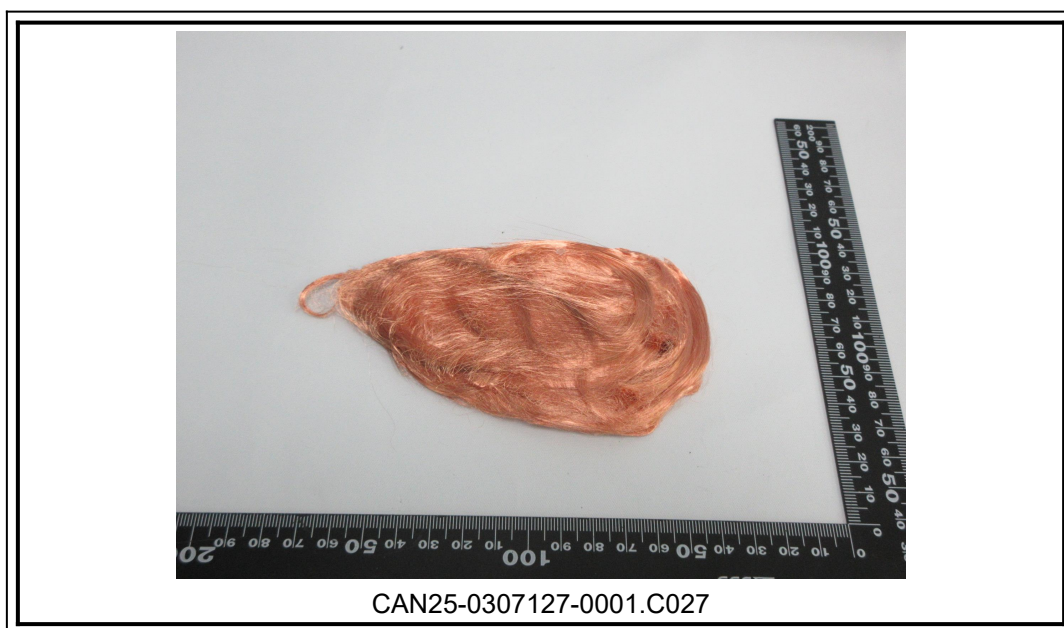
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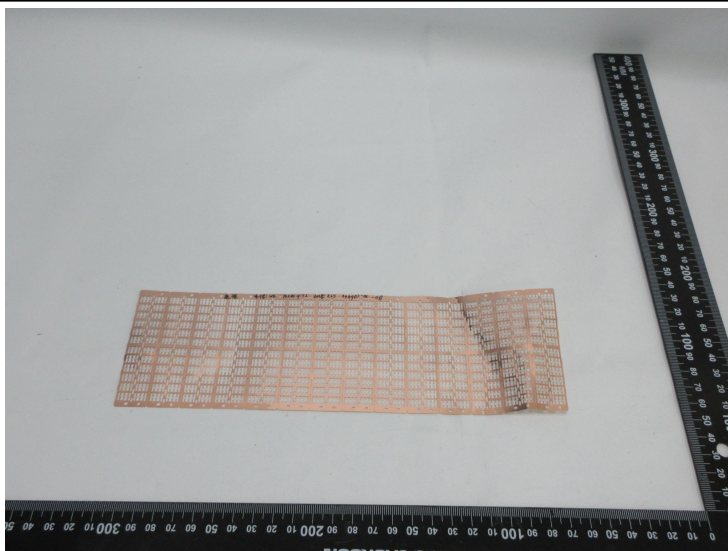
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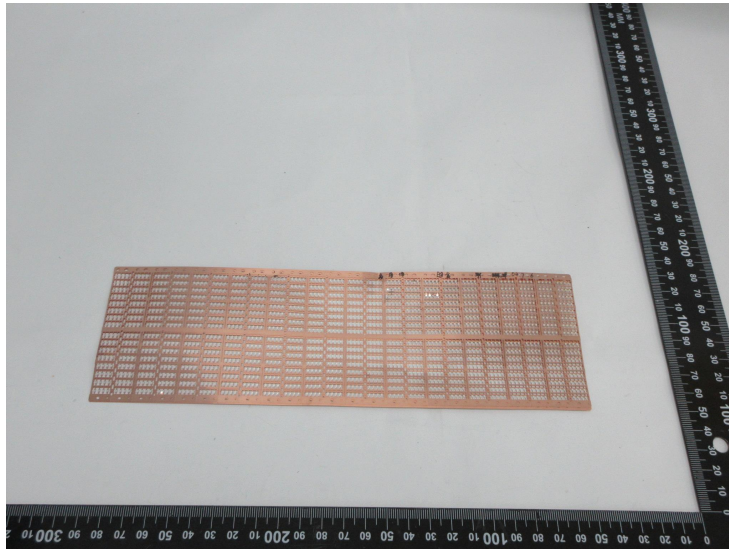
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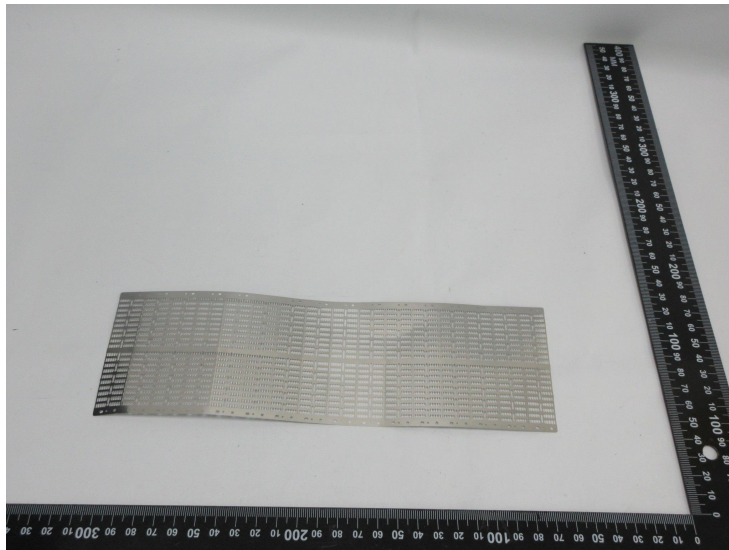
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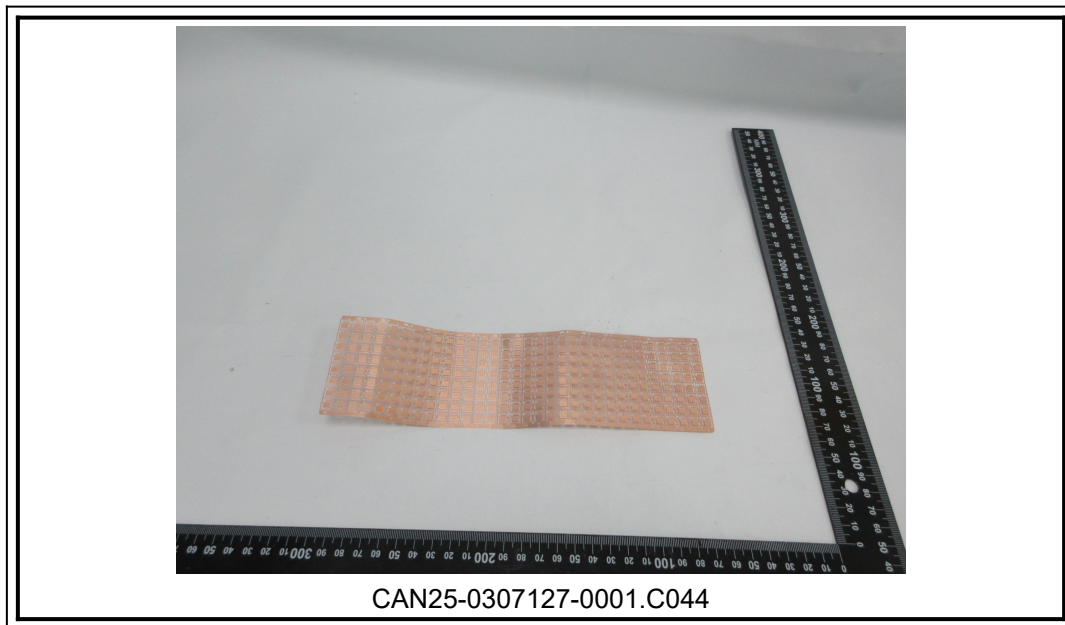
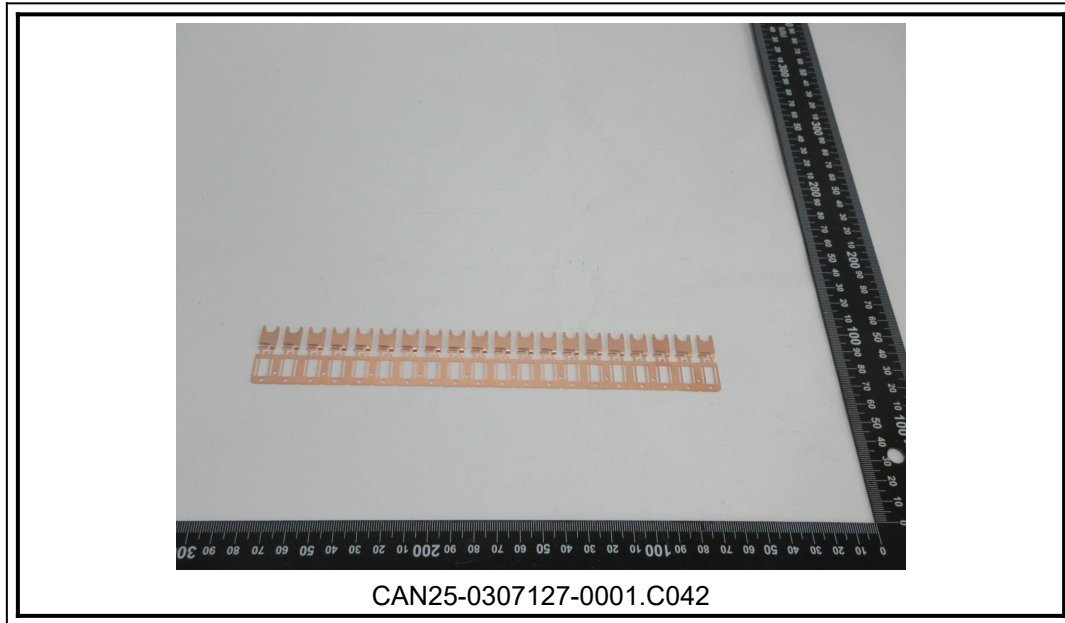
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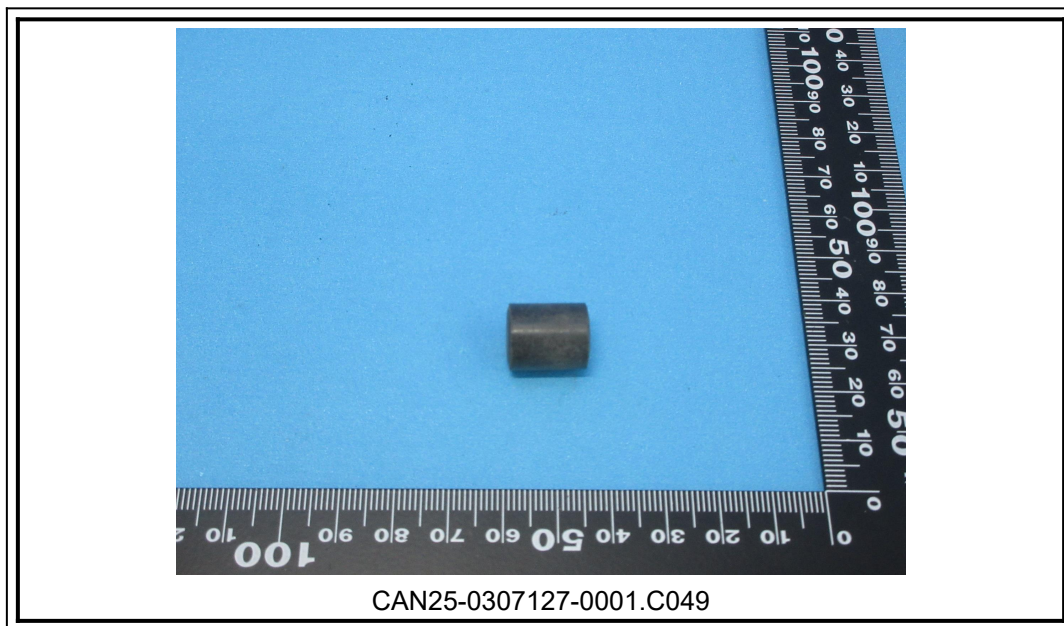
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