

检测报告

编号: CANEC23015759206

日期: 2023年12月14日

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客户名称: 佛冈建滔实业有限公司
客户地址: 广东省佛冈县石角镇建滔路1号

样品名称: 挠性铜箔
以上样品及信息由客户提供。

SGS 工作编号: GZP23-021175
样品接收时间: 2023年12月05日
检测周期: 2023年12月05日 ~ 2023年12月13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(PBBs)、多溴二苯醚(PBDEs)、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)	符合
全氟辛烷磺酸(PFOS)及衍生物和全氟辛酸(PFOA)及其盐	见检测结果
卤素	见检测结果
元素分析	见检测结果
红磷	见检测结果
邻苯二甲酸盐(或酯)	见检测结果
六溴环十二烷(HBCDD)	见检测结果

通标标准技术服务有限公司广州分公司
授权签名

钟臻

Jany Zhong 钟臻
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	CAN23-0157592-0001.C001	铜色金属箔

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(PBBs)、多溴二苯醚(PBDEs)、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)

检测方法: 参考 IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, 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	A1
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1000	mg/kg	2	ND
汞 (Hg)	1000	mg/kg	2	ND
六价铬(Cr(VI)) ▼	-	µg/cm ²	0.10	ND
多溴联苯之和(PBBs)	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(PBDEs)	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
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



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检测项目	限值	单位	MDL	A1
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测试时样品含六价铬的状态。

全氟辛烷磺酸(PFOS)及衍生物和全氟辛酸(PFOA)及其盐

检测方法: 参考 CEN/TS 15968:2010, 采用 HPLC-MS 或 LC-MS/MS 进行分析。

检测项目	CAS No.	单位	MDL	A1
全氟辛烷磺酸(PFOS)及其衍生物	-	mg/kg	-	ND
全氟辛烷磺酸 (PFOS)及其盐*	1763-23-1	mg/kg	0.010	ND
N-乙基全氟辛烷磺酰胺 (N-EtFOSA)	4151-50-2	mg/kg	0.010	ND
N-甲基全氟辛烷磺酰胺 (N-MeFOSA)	31506-32-8	mg/kg	0.010	ND
2-(N-乙基全氟辛基磺酰胺)乙醇 (N-EtFOSE)	1691-99-2	mg/kg	0.010	ND
2-(N-甲基全氟辛基磺酰胺)乙醇 (N-MeFOSE)	24448-09-7	mg/kg	0.010	ND
全氟辛基磺酰胺 (PFOSA)	754-91-6	mg/kg	0.010	ND
全氟辛酸 (PFOA)及其盐*	335-67-1	mg/kg	0.010	ND

备注:

- (1) 全氟辛酸 (PFOA)及其盐*包括 PFOA (CAS No. 335-67-1)、APFO (CAS No. 3825-26-1)、PFOA-Na (CAS No. 335-95-5)、PFOA-K (CAS No. 2395-00-8)、PFOA-Ag (CAS No. 335-93-3) 和 PFOA-F (CAS No. 335-66-0)。全氟辛酸 (PFOA)的结果用于表示全氟辛酸 (PFOA)及其盐。
- (2) 全氟辛烷磺酸 (PFOS)及其盐*包括全氟辛烷磺酸 (CAS No.1763-23-1)、POSF (CAS No. 307-35-7)、PFOS-K (CAS No. 2795-39-3)、PFOS-NH₄ (CAS No. 29081-56-9)、PFOS-N(C₁₀H₂₁)₂(CH₃)₂ (CAS No. 251099-16-8)、PFOS-NH₂(C₂H₄OH)₂ (CAS No. 70225-14-8)、PFOS-Li (CAS No. 29457-72-5)、PFOS-N(C₂H₅)₄ (CAS No. 56773-42-3) 和 PFOS-Na (CAS No. 4021-47-0)。全氟辛烷磺酸的结果用于表示全氟辛烷磺酸及其盐。



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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 (Cl)	mg/kg	50	ND
溴 (Br)	mg/kg	50	ND
碘 (I)	mg/kg	50	ND

元素分析

检测方法: 参考 US EPA 3050B:1996, 采用 ICP-OES/AAS 进行分析。

检测项目	单位	MDL	A1
砷(As)	mg/kg	10	ND
铍(Be)	mg/kg	5	ND
锑(Sb)	mg/kg	10	ND

红磷

检测方法: SGS 内部方法 (SGS-CCL-TOP-215-01), 采用 PY-GC/MS/ ICP-OES / GC-MS 进行分析。

检测项目	CAS No.	单位	MDL	A1
红磷	7723-14-0	mg/kg	500	ND

邻苯二甲酸盐(或酯)

检测方法: 参考 IEC 62321-8:2017, 采用 GC-MS 进行分析。

检测项目	CAS No.	单位	MDL	A1
邻苯二甲酸二丁酯 (DBP)	84-74-2	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	117-81-7	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	85-68-7	mg/kg	50	ND
邻苯二甲酸二异壬酯(DINP)	28553-12-0 /68515-48-0	mg/kg	50	ND
邻苯二甲酸二辛酯(DNOP)	117-84-0	mg/kg	50	ND
邻苯二甲酸二异癸酯(DIDP)	26761-40-0 /68515-49-1	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	84-69-5	mg/kg	50	ND
邻苯二甲酸二正己酯(DnHP)	84-75-3	mg/kg	50	ND
邻苯二甲酸二戊酯 (DPENP/ DnPP)	131-18-0	mg/kg	50	ND
邻苯二甲酸二苯酯(DPhP)	84-62-8	mg/kg	50	ND
邻苯二甲酸二甲酯(DMP)	131-11-3	mg/kg	50	ND
邻苯二甲酸二乙酯(DEP)	84-66-2	mg/kg	50	ND



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检测项目	CAS No.	单位	MDL	A1
邻苯二甲酸二丙酯(DPrP)	131-16-8	mg/kg	50	ND
邻苯二甲酸二环己酯(DCHP)	84-61-7	mg/kg	50	ND
邻苯二甲酸二苯甲酯(DBzP)	523-31-9	mg/kg	50	ND
邻苯二甲酸二壬酯(DNP)	84-76-4	mg/kg	50	ND
邻苯二甲酸二异辛酯(DIOP)	27554-26-3	mg/kg	50	ND

六溴环十二烷(HBCDD)

检测方法: 参考 IEC 62321-9:2021, 采用 GC-MS 进行分析。

检测项目	CAS No.	单位	MDL	A1
六溴环十二烷(HBCDD)及其非对映异构体(α -HBCDD, β -HBCDD, γ -HBCDD)	134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6	mg/kg	20	ND

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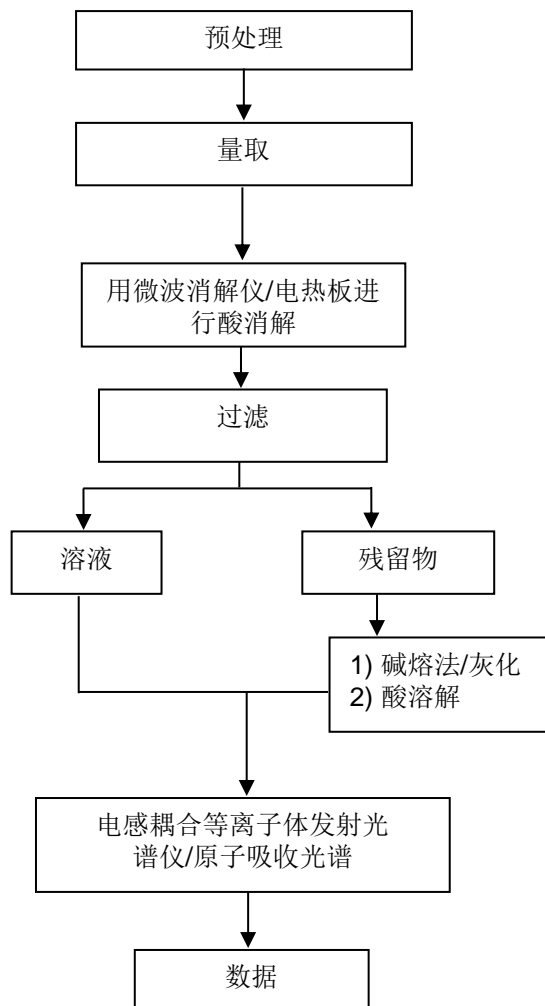
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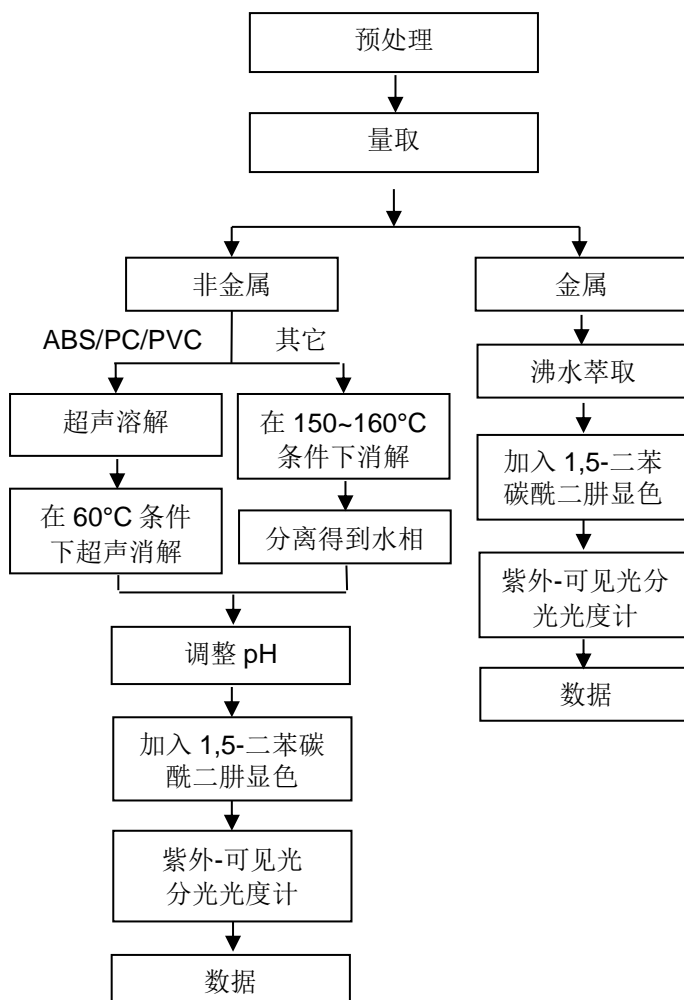
附件

元素检测流程图

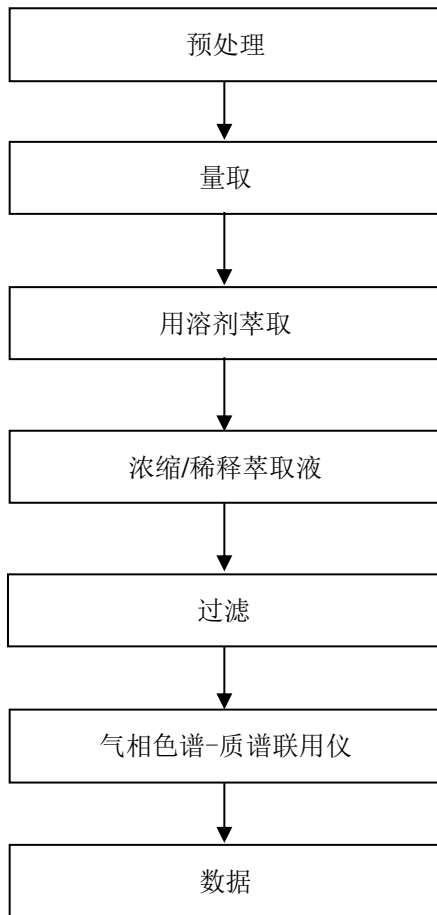
样品按照下述流程被完全消解



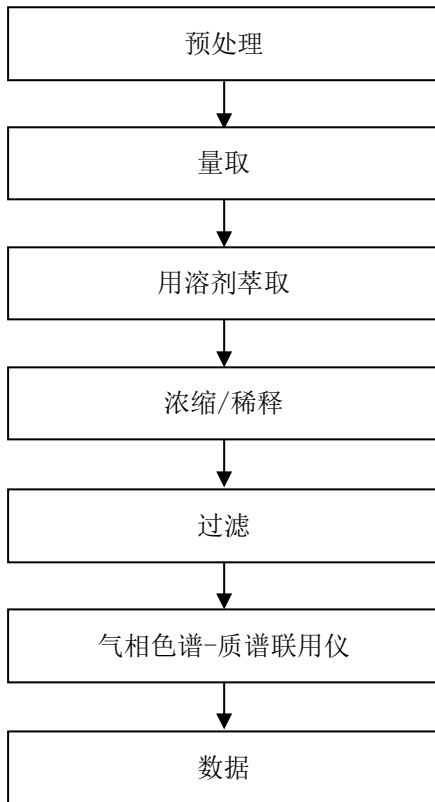
六价铬检测流程图



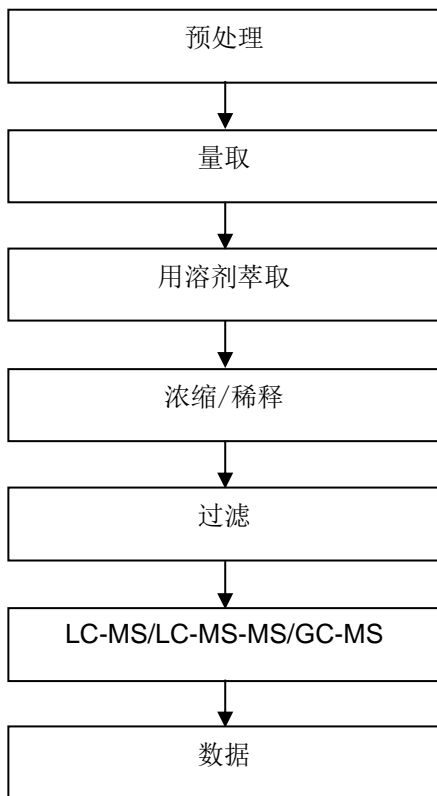
PBBs/PBDEs 检测流程图



Phthalates 检测流程图



PFASs/ PFOS/PFOA 检测流程图



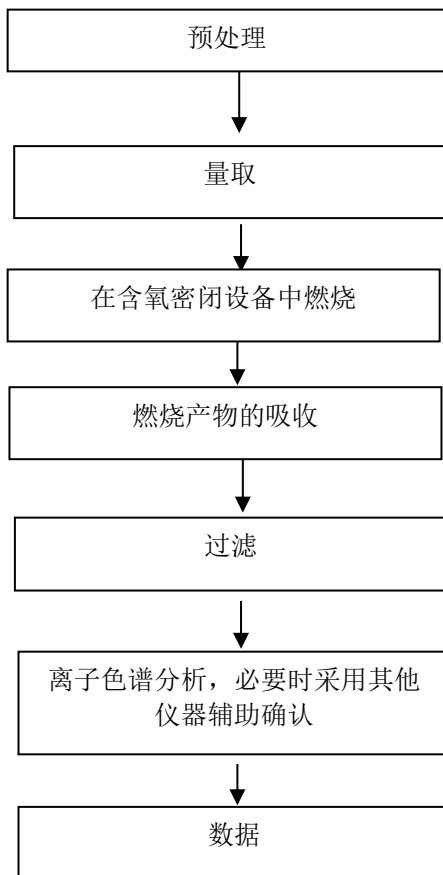
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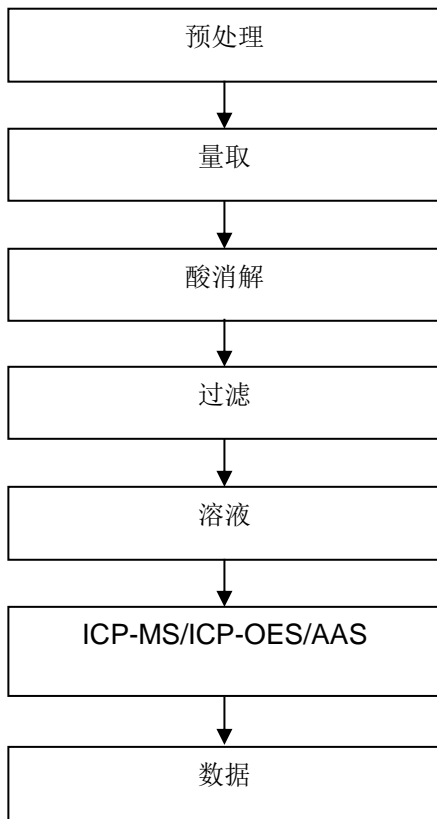
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卤素检测流程图

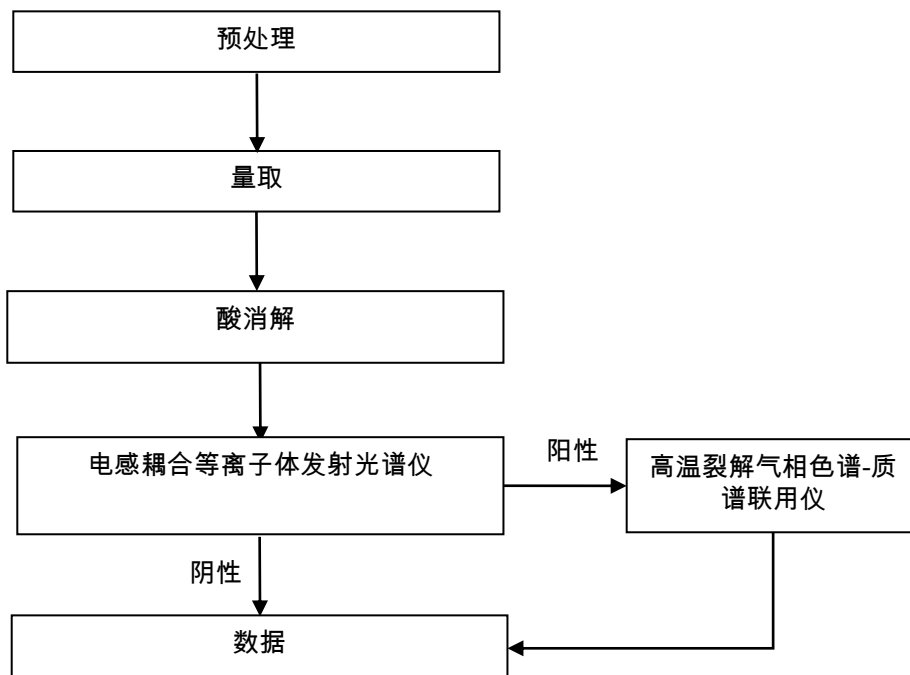


元素检测流程图

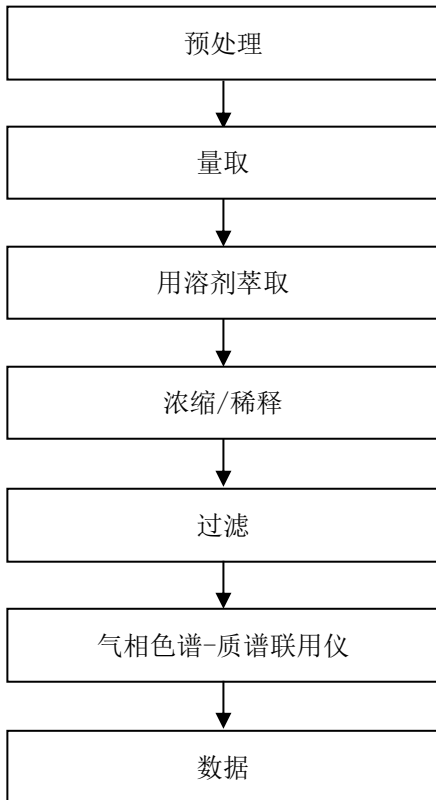


附件

红磷检测流程图



HBCDD 检测流程图



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