

检测报告

编号: CANEC2209914118

日期: 2022年06月03日 第1页,共15页

客户名称: 优耐铜材(苏州)有限公司
客户地址: 江苏省苏州市高新区金枫路567号

样品名称: 硫酸铜
型号: 化学镀级
客户参考信息: 电镀级硫酸铜晶体
以上样品及信息由客户提供。

SGS工作编号: CP22-026415 - GZ
内部编号: 22655395
样品接收日期: 2022年05月17日
检测周期: 2022年05月17日 - 2022年05月30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
结论:

基于所送样品进行的检测, 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))的检测结果显示符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司广州分公司
授权签名

任婷

Annie Ren任婷
批准签署人

scan to see the report



A28EEC44



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

198 Kezhu Road, Sciencetech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

检测报告

编号: CANEC2209914118

日期: 2022年06月03日 第2页,共15页

检测结果:

检测样品描述:

样品编号	SGS样品ID	描述
SN1	CAN22-099141.009	蓝色颗粒

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

检测方法: 参考IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, 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	009
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	ND
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))	1,000	mg/kg	8	ND
多溴联苯之和(PBBs)	1,000	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)	1,000	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
五溴二苯醚	-	mg/kg	5	ND



SGS-CSTC Standards Technical Services Co., Ltd.
 Guangzhou Branch Testing Center Chemical Laboratory.

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

198 Kezhu Road, Sciotech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555 www.sgs.com.cn
 t (86-20) 82155555 sgs.china@sgs.com

检测报告

编号: CANEC2209914118

日期: 2022年06月03日 第3页,共15页

检测项目	限值	单位	MDL	009
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)	1,000	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	1,000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1,000	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	1,000	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

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(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。

卤素

检测方法: 参考EN 14582:2016, 用 IC分析。

检测项目	单位	MDL	009
氟 (F)	mg/kg	50	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: SGS内部方法 (GZTC CHEM-TOP-004-01, 参考EPA 3052: 1996), 采用ICP-OES进行分析。

检测项目	单位	MDL	009
锑 (Sb)	mg/kg	10	ND



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

198 Kezhu Road, Sciotech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663

中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555 www.sgsgroup.com.cn

t (86-20) 82155555 sgs.china@sgs.com

检测报告

编号: CANEC2209914118

日期: 2022年06月03日 第4页,共15页

邻苯二甲酸酯

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	009
邻苯二甲酸二异癸酯 (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.005	ND
邻苯二甲酸二正辛酯 (DNOP)	117-84-0	%(w/w)	0.005	ND
邻苯二甲酸二正己酯 (DnHP)	84-75-3	%(w/w)	0.005	ND

六溴环十二烷(HBCDD)

检测方法: SGS 内部方法(GZTC CHEM-TOP-073, 参考EPA 3550C:2007), 采用GC-MS进行分析。

检测项目	CAS NO.	单位	MDL	009
六溴环十二烷(HBCDD) 及其非对映异构体(α -HBCDD, β -HBCDD, γ -HBCDD)	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	mg/kg	10	ND

多环芳香烃

检测方法: 参考AfPS GS 2019:01 PAK 检测, 采用 GC-MS进行分析。

检测项目	CAS NO.	单位	MDL	009
萘 (NAP)	91-20-3	mg/kg	0.1	ND
菲 (PHE)	85-01-8	mg/kg	0.1	ND
蒽 (ANT)	120-12-7	mg/kg	0.1	ND
荧蒽 (FLT)	206-44-0	mg/kg	0.1	ND
苊 (PYR)	129-00-0	mg/kg	0.1	ND
苯并(a)蒽 (BaA)	56-55-3	mg/kg	0.1	ND
䓛 (CHR)	218-01-9	mg/kg	0.1	ND
苯并(b)荧蒽 (BbF)	205-99-2	mg/kg	0.1	ND
苯并(j)荧蒽 (BjF)	205-82-3	mg/kg	0.1	ND
苯并(k)荧蒽 (BkF)	207-08-9	mg/kg	0.1	ND
苯并(a)苊 (BaP)	50-32-8	mg/kg	0.1	ND
苯并(e)苊 (BeP)	192-97-2	mg/kg	0.1	ND
茚并(1,2,3-c,d)苊 (IPY)	193-39-5	mg/kg	0.1	ND



检测报告

编号: CANEC2209914118

日期: 2022年06月03日 第5页,共15页

检测项目	CAS NO.	单位	MDL	009
二苯并(a,h)蒽(DBA)	53-70-3	mg/kg	0.1	ND
苯并(g,h,i)芘(二苯嵌苯) (BPE)	191-24-2	mg/kg	0.1	ND
蒽烯(ANY)	208-96-8	mg/kg	0.1	ND
蒽(蒽嵌戊烷) (ANA)	83-32-9	mg/kg	0.1	ND
苊 (FLU)	86-73-7	mg/kg	0.1	ND
7项多环芳香烃总和[蒽烯(ANY), 蒽(蒽嵌戊烷) (ANA), 苊 (FLU), 菲 (PHE), 芘 (PYR), 蒽 (ANT), 荧蒽 (FLT)]	-	mg/kg	-	ND
18项多环芳香烃总和	-	mg/kg	-	ND

客户要求

参数 (mg/kg)	1 类	2 类		3 类	
	设计意图为放入口中的材料, 或与皮肤长期接触 (超过 30 秒) 的材料用于 -2009/48/EC 定义的玩具, 或 -供3岁以下儿童 ^{a,b} 使用。	不属于第 1 类, 设计意图或可预见 ^d 与皮肤长期接触 (超过 30 秒) 或短期重复接触 ^c 的材料		不属于第 1 和 2 类, 设计意图或可预见与皮肤短期接触 (不超过 30 秒) 材料	
		a. 供儿童使用的产品	b. 其他产品	a. 供儿童使用的产品	b. 其他产品
苯并(a)芘 (BaP)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(e)芘 (BeP)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(a)蒽 (BaA)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(b)荧蒽 (BbF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(j)荧蒽 (BjF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(k)荧蒽 (BkF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
蒽 (CHR)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
二苯并(a,h)蒽 (DBA)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(g,h,i)芘(二苯嵌苯) (BPE)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苊苯(1,2,3-c,d)芘 (IPY)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
菲 (PHE), 芘 (PYR), 蒽 (ANT), 荧蒽 (FLT), 蒽烯 (ANY), 蒽(蒽嵌戊烷) (ANA), 苊 (FLU), 7 PAH 之和	< 1 (总和)	< 5 (总和)	< 10 (总和)	< 20 (总和)	< 50 (总和)
萘 (NAP)	< 1	< 2		< 10	
18 PAH之和	< 1	< 5	< 10	< 20	< 50

注释:

^a 儿童是指法定年龄未满 14 周岁的人。^b 供儿童使用包括儿童的主动接触或被动接触。^c “短期重复接触”的定义摘自 REACH 附录 XVII 第 50 条修正案 ((EC) No. 1272/2013)。^d 根据德国产品安全法 (ProdSG) (第一章第 2 条第 28 款) 的定义, “可预见的使用”是指将产品投放市场的人无意但可以合理预见的方式使用产品。

备注: 材料的分类参考 2020 年 4 月 10 日发布的 AfPS GS 2019:01 PAK 标准。蒽烯(ANY)、蒽(蒽嵌戊烷) (ANA)和苊 (FLU) 不在 AfPS GS 2019:1 PAK 的范围内, 但是结合其在 AfPS GS 2014:01 PAK 的范围内, 以及考虑到 LFGB 章节 30 的产品安全要求, 推荐进行测试。



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

198 Kezhu Road, Sci-Tech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663

中国·广州·经济技术开发区科学城科珠路198号

邮编: 510663

t (86-20) 82155555

t (86-20) 82155555

www.sgs.com

sgs.china@sgs.com

检测报告

编号: CANEC2209914118

日期: 2022年06月03日 第6页,共15页

全氟辛酸(PFOA)及其盐 & 全氟辛烷磺酸 (PFOS)及其衍生物

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

检测项目	CAS NO.	单位	MDL	009
全氟辛酸 (PFOA) 及其盐+	335-67-1	mg/kg	10.000	ND
全氟辛烷磺酸 (PFOS)^	1763-23-1	mg/kg	10.000	ND
全氟辛基磺酰胺(PFOSA)	754-91-6	mg/kg	10.000	ND
N-甲基全氟辛烷磺酰胺(MeFOSA)	31506-32-8	mg/kg	10.000	ND
N-乙基全氟辛烷磺酰胺(EtFOSA)	4151-50-2	mg/kg	10.000	ND
2-(N-甲基全氟辛基磺酰胺) 乙醇(MeFOSE)	24448-09-7	mg/kg	10.000	ND
2-(N-乙基全氟辛基磺酰胺) 乙醇(EtFOSE)	1691-99-2	mg/kg	10.000	ND
全氟辛烷磺酸 (PFOS) 及其衍生物	-	mg/kg	-	ND

备注:

- (1) + PFOA 及其盐包含PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8), PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) 和 APFO (CAS No.: 3825-26-1);
- (2) ^ 全氟辛烷磺酸 (PFOS) 包含 PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH₄ (CAS No.: 29081-56-9), PFOS-NH(OH)₂ (CAS No.: 70225-14-8), PFOS-N(C₂H₅)₄ (CAS No.: 56773-42-3), PFOS-DDA (CAS No.: 251099-16-8) 和 POSF (CAS No.: 307-35-7)

C₁₀~C₁₃ 氯代烃(短链氯化石蜡)(SCCPs)和C₁₄~C₁₇ 氯代烃(中链氯化石蜡)(MCCPs)

检测方法: 参考ISO 18219-1:2021 & ISO 18219-2:2021, 采用GC-NCI-MS进行分析。

检测项目	CAS NO.	单位	MDL	009
C ₁₀ ~C ₁₃ 氯代烃(短链氯化石蜡)(SCCPs)	85535-84-8 和 其它	mg/kg	50	ND
C ₁₄ ~C ₁₇ 氯代烃(中链氯化石蜡)(MCCPs)	85535-85-9 和 其它	mg/kg	50	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。



SGS-CSTC Standards Technical Services Co., Ltd.
 Guangzhou Branch Testing Center Chemical Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

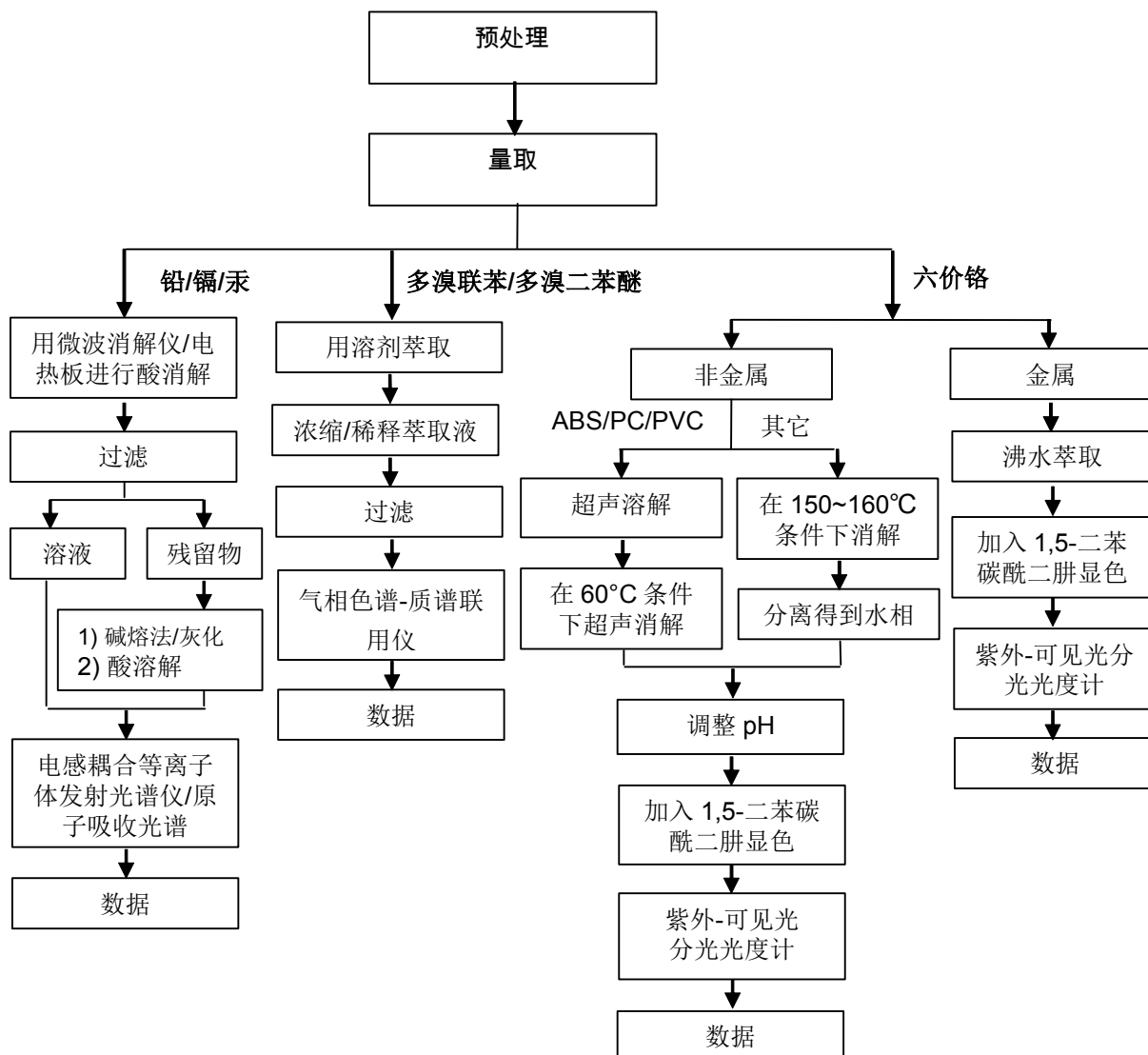
198 Kezhu Road, Sciotech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555 www.sgsgroup.com.cn
 t (86-20) 82155555 sgs.china@sgs.com

附件

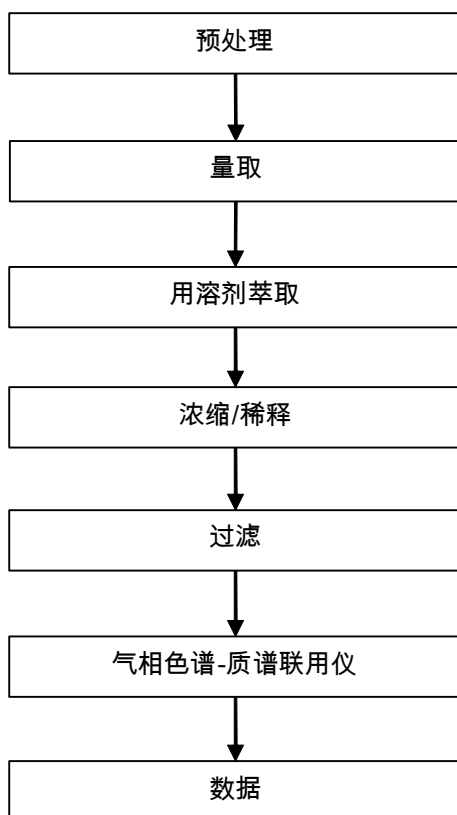
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs 检测流程图

1) 样品按照下述流程被完全消解(六价铬和多溴联苯/多溴二苯醚检测除外)。



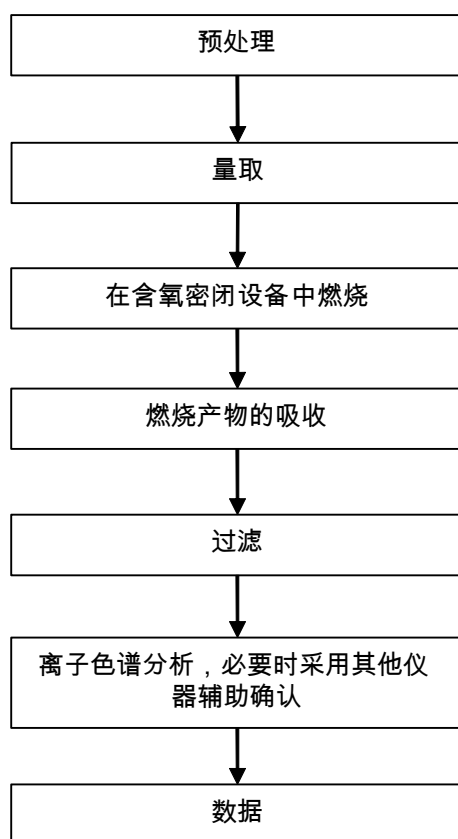
附件

Phthalates 检测流程图



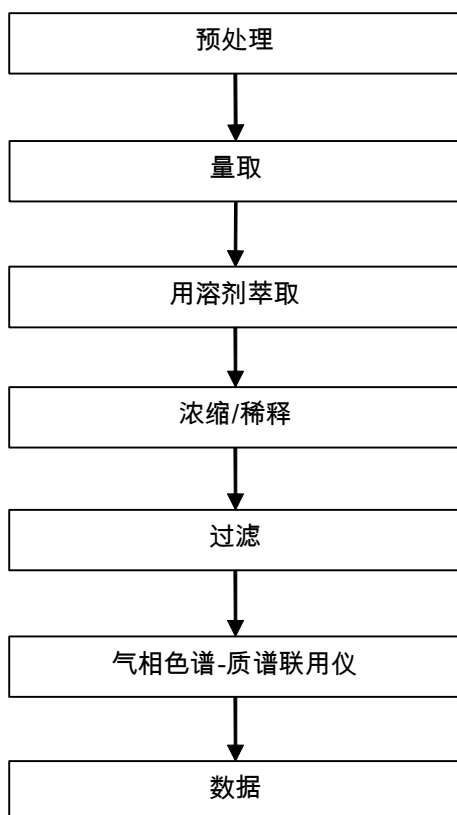
附件

Halogen 检测流程图



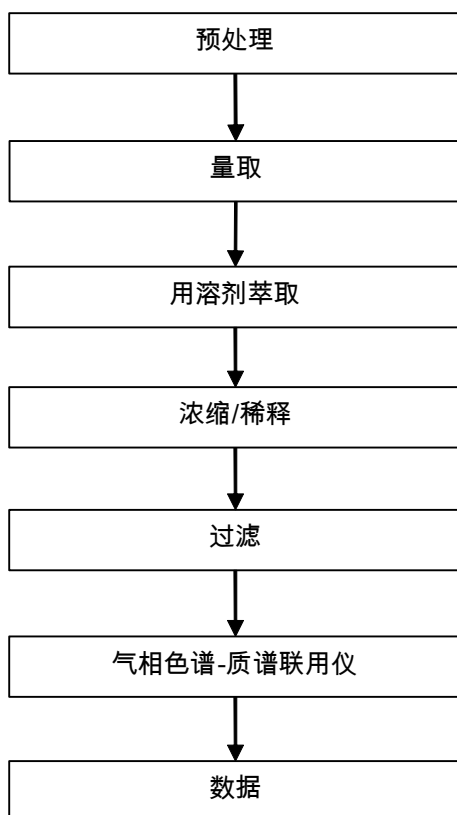
附件

HBCDD 检测流程图



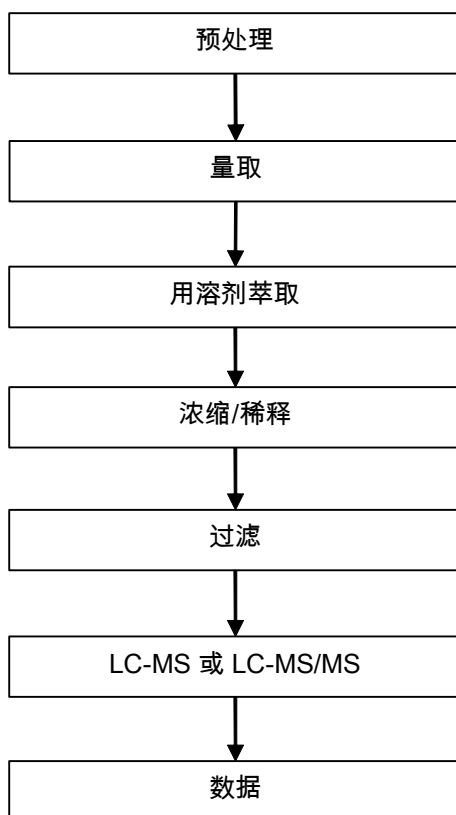
附件

PAHs 检测流程图



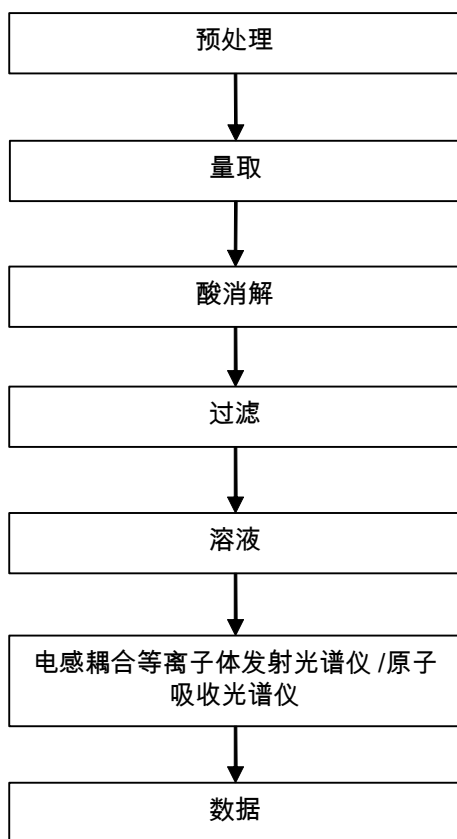
附件

PFOA / PFOS 检测流程图



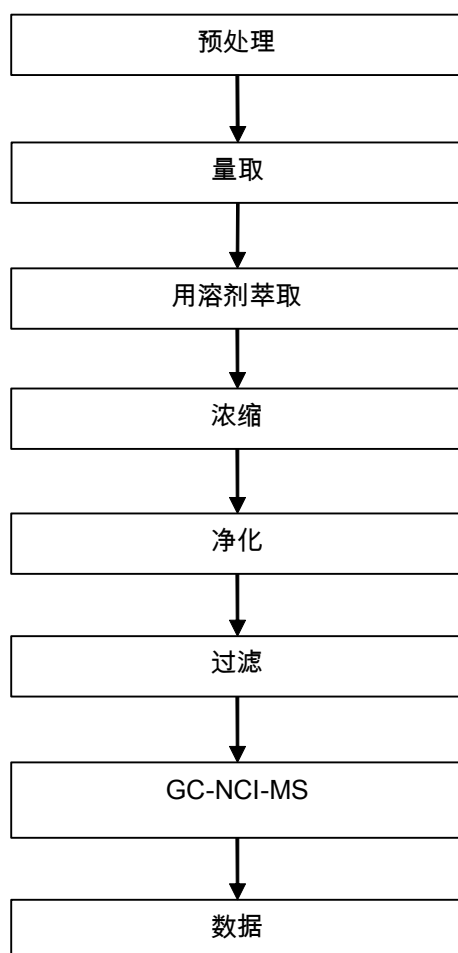
附件

元素检测流程图



附件

SCCP/MCCP/LCCP 检测流程图

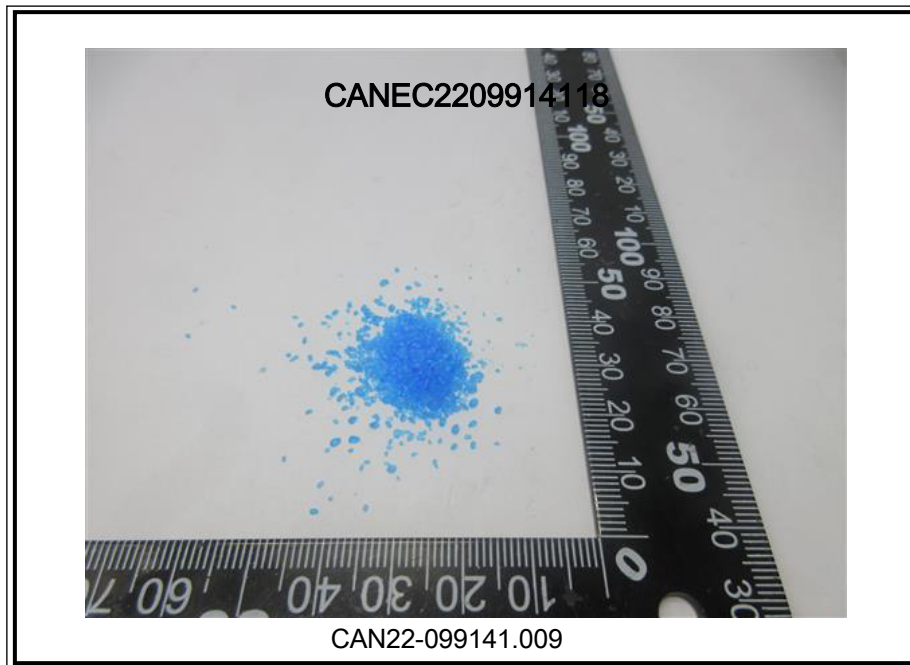


检测报告

编号: CANEC2209914118

日期: 2022年06月03日 第15页,共15页

样品照片:



此照片仅限于随SGS正本报告使用

*** 报告完 ***



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

198 Kezhu Road, Sciencetech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com