

检测报告 编号: SHAEC23006806102 **日期:** 2023 年 05 月 30 日 第 1 页, 共 12 页

客户名称: 济南易得电子有限公司

客户地址: 山东省济南市济阳县泰兴西街6号

样品名称: SMD 二极管/无卤

以上样品及信息由客户提供。

SGS 工作编号: TIC1020230524154354XF6G

样品接收时间: 2023年05月24日

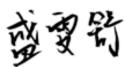
2023年05月24日~2023年05月30日 检测周期:

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(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
元素	见检测结果
卤素	见检测结果
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

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Sue Sheng 盛雯舒 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	SHA23-0068061-0001.C001	黑色/银色本体部分

### 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-乙基已基)酯 (DEHP)和邻苯二甲酸二异丁酯(DIBP)

参考 IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 检测方法: 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	33820▲
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(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 A1 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)。

### <u>元素</u>

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

检测项目	单位	MDL	A1
锑(Sb)	mg/kg	10	ND

### 卤素

参考 EN 14582:2016,采用 IC 进行分析。 检测方法:

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

## 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*	-	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



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检测项目	CAS No.	单位	MDL	A1
全氟辛基磺酰胺 (PFOSA)	754-91-6	mg/kg	0.010	ND
全氟辛酸 (PFOA)及其盐*	-	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-NH<sub>4</sub> (CAS No. 29081-56-9) 、PFOS-N(C<sub>10</sub>H<sub>21</sub>)<sub>2</sub>(CH<sub>3</sub>)<sub>2</sub> (CAS No. 251099-16-8) 、PFOS-NH<sub>2</sub>(C<sub>2</sub>H<sub>4</sub>OH)<sub>2</sub> (CAS No. 70225-14-8) 、PFOS-Li (CAS No. 29457-72-5) 、 PFOS-N(C<sub>2</sub>H<sub>5</sub>)<sub>4</sub> (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。

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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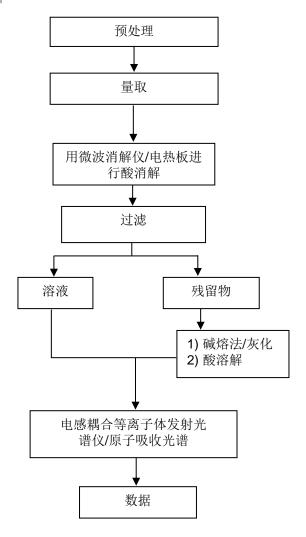
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附件

### 元素检测流程图

样品按照下述流程被完全消解





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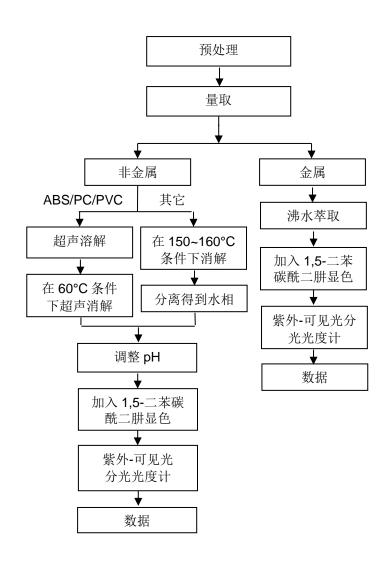


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## 六价铬检测流程图





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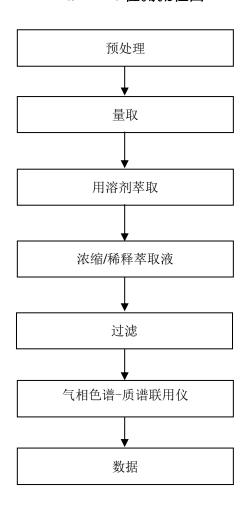


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## PBBs/PBDEs 检测流程图





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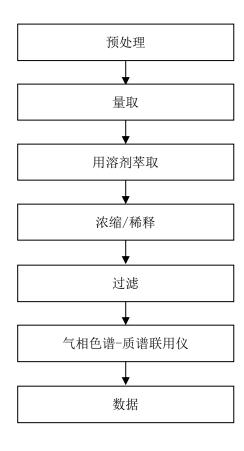


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## Phthalates 检测流程图





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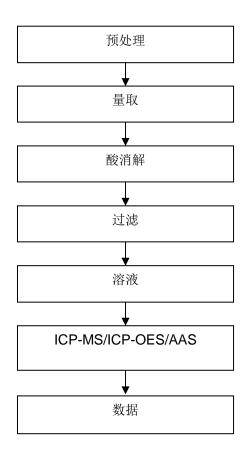


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### 元素检测流程图





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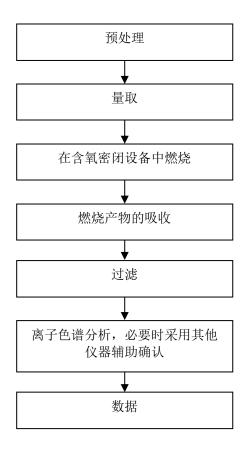


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### 卤素检测流程图





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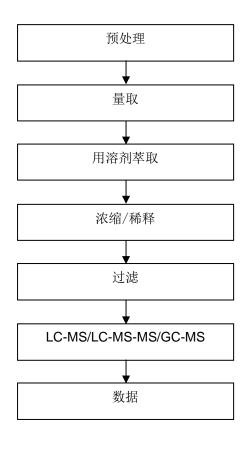


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### PFASs/ PFOS/PFOA 检测流程图





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