

## 测试报告

No. TAOEC2004305402

日期: 2020年10月12日

第1页,共11页

济南鲁晶半导体有限公司

中国济南市高新区天辰大街978号

以下测试之样品是由申请者所提供及确认: 塑封三极管

SGS工作编号: QP20-002072 - QD

型号: SOT-23

客户参考信息: 其他型号: 塑封二极管, 整流桥, MOS, DO-41, DO-15, DO-27, R-1, R-6, SMA, SMB, SMC, MBS, MBF, DB, WOM, KBL, KBU, KBJ, KBP, KBPC, SOT-23, SOT-323, SOT-363, SOT-523, SOT-723, SOT-923, SOT-113, SOT-89, SOD-123, SOD-323, SOD-523, SOD-723, SOD-923, TO-92, TO-126, TO-220, TO-251, TO-252, TO-3P, TO-247, TO-263, TO-277, ABS, SOP-4, SOP-8, DFN, QFN

样品接收日期: 2020年09月24日

测试周期: 2020年09月24日 - 2020年10月12日

测试要求: 根据客户要求测试

测试方法: 请参见下一页

测试结果: 请参见下一页

通标标准技术服务(青岛)有限公司  
授权签名

Wang Bo, Claire 王渤  
批准签署人



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测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	TAO20-043054.001	带有银色金属的黑色固体 (混测)

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

测试方法: 参考IEC 62321-5:2013, IEC 62321-4:2013+AMD1:2017, 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.

测试项目	限值	单位	MDL	001
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))	1000	mg/kg	8	ND
多溴联苯之和(PBBs)	1000	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)	1000	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
六溴二苯醚	-	mg/kg	5	ND



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测试项目	限值	单位	MDL	001
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)	1000	mg/kg	50	ND
邻苯二甲酸苄基丁基酯(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 。  
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](https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID) ,  
FSP\_LANG\_ID:1258637 , 25
- (2) 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。
- (3) DEHP, BBP, DBP 和 DIBP的限制不适用于玩具产品, 因为No.1907/2006附录XVII第51条已对玩具产品中的DEHP, BBP, DBP 和 DIBP含量进行了限制。
- (4) 采用IEC 62321-7-1:2015沸水萃取法核查测试样品未检出六价铬。
- (5) 样品的测试是基于申请人要求混合测试, 报告中的混合测试结果不代表其中个别单一材质的含量, 该测试数据仅供参考。

### 卤素

测试方法: 参照EN 14582: 2016方法测定, 采用 IC进行分析。

测试项目	单位	MDL	001
氟(F)	mg/kg	50	ND
氯(Cl)	mg/kg	50	ND
溴(Br)	mg/kg	50	ND
碘(I)	mg/kg	50	ND

### 备注:

- 这项测试由SGS天津化学实验室操作。
- 样品的测试是基于申请人要求混合测试, 报告中的混合测试结果不代表其中个别单一材质的含量, 该测试数据仅供参考。

### 全氟辛烷磺酸 (PFOS)及衍生物和全氟辛酸(PFOA)



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测试方法: 参考 CEN/TS 15968: 2010方法, 采用HPLC-MS进行分析。

测试项目	CAS NO.	单位	MDL	001
全氟辛烷磺酸(PFOS)及衍生物		mg/kg	-	ND
全氟辛烷磺酸(PFOS)^	1763-23-1	mg/kg	10	ND
2-(N-甲基全氟辛基磺酰胺)乙醇(MeFOSE)	24448-09-7	mg/kg	10	ND
2-(N-乙基全氟辛基磺酰胺)乙醇(EtFOSE)	1691-99-2	mg/kg	10	ND
N-甲基全氟辛烷磺酰胺(MeFOSA)	31506-32-8	mg/kg	10	ND
N-乙基全氟辛烷磺酰胺(EtFOSA)	4151-50-2	mg/kg	10	ND
全氟辛基磺酰胺(PFOSA)	754-91-6	mg/kg	10	ND
全氟辛酸(PFOA)		mg/kg	10	ND

### 备注:

(1) ^全氟辛烷磺酸是指其酸、盐/衍生物, 包括全氟辛烷磺酸 (CAS No.: 1763-23-1), 全氟辛基磺酸钾 (CAS No.: 2795-39-3), 全氟辛基磺酸锂 (CAS No.: 29457-72-5), 全氟辛基磺酸铵 (CAS No.: 29081-56-9), 全氟辛烷磺酸二乙醇胺 (CAS No.: 70225-14-8), 全氟辛烷磺酸四乙铵 (CAS No.: 56773-42-3), 全氟辛基磺酸二癸二甲基铵 (CAS No.: 251099-16-8) 和全氟辛基磺酰氟 (CAS No.: 307-35-7)。

(2) 样品的测试是基于申请人要求混合测试, 报告中的混合测试结果不代表其中个别单一材质的含量, 该测试数据仅供参考。

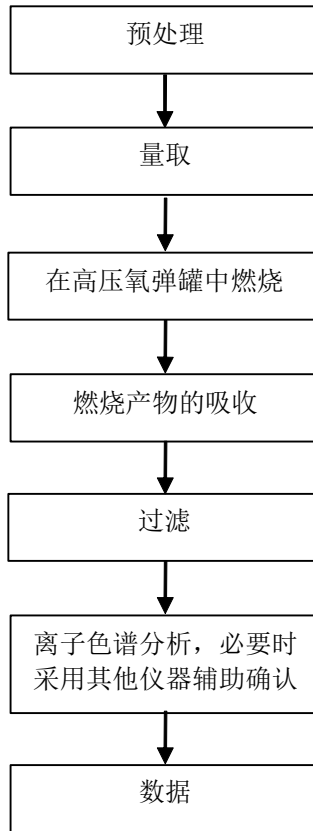
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附件

### 卤素测试流程图

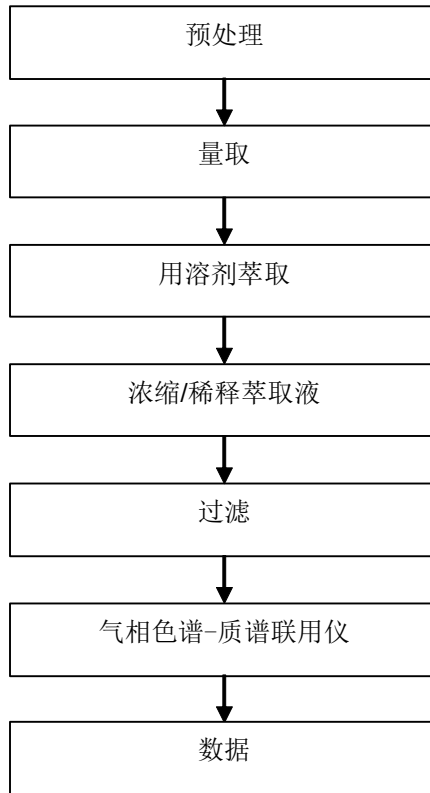


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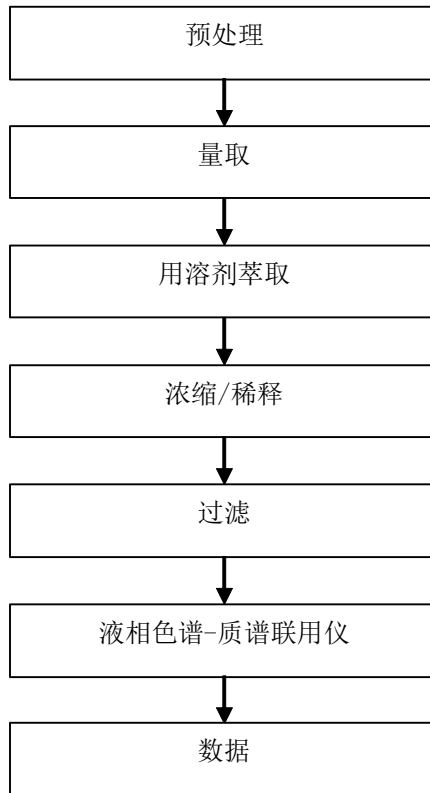
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### PBBs/PBDEs 测试流程图



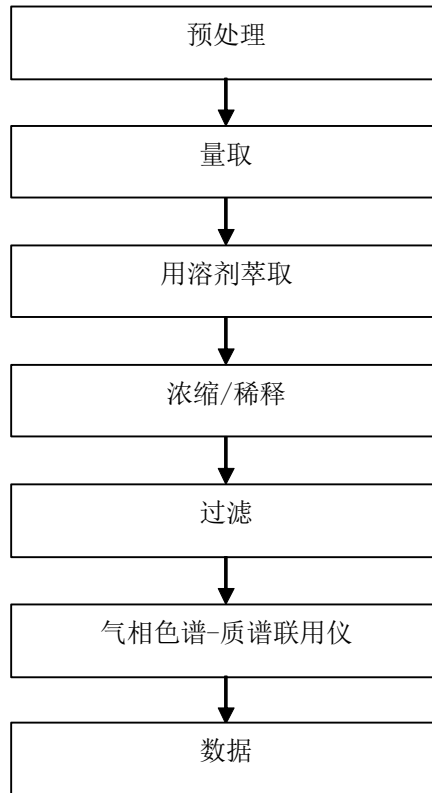
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## PFOS/PFOA 测试流程图



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## Phthalates 测试流程图



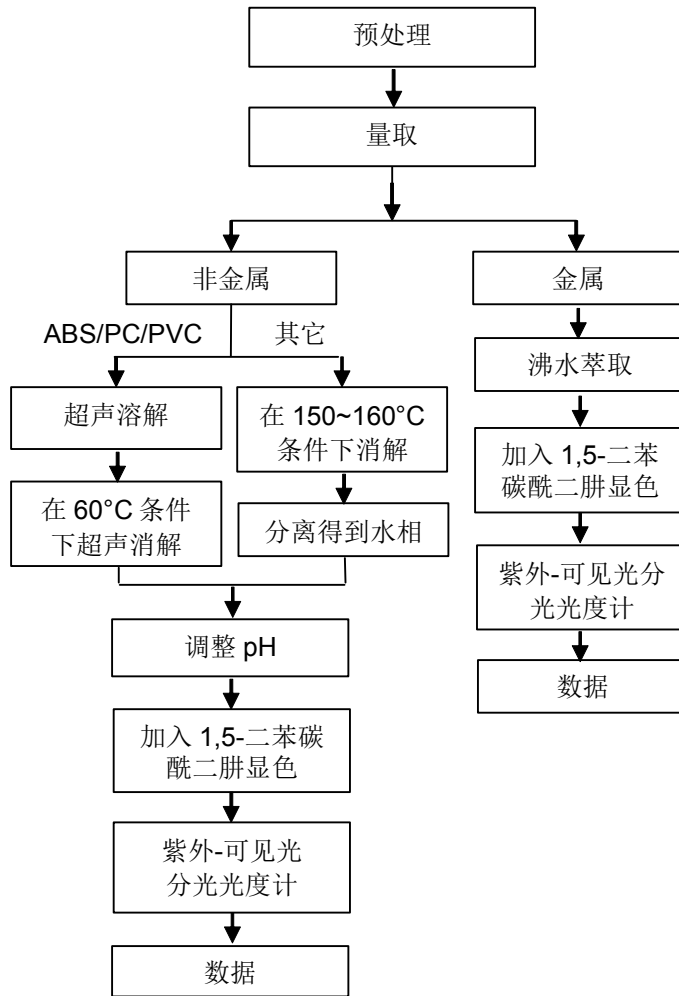
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## 六价铬测试流程图

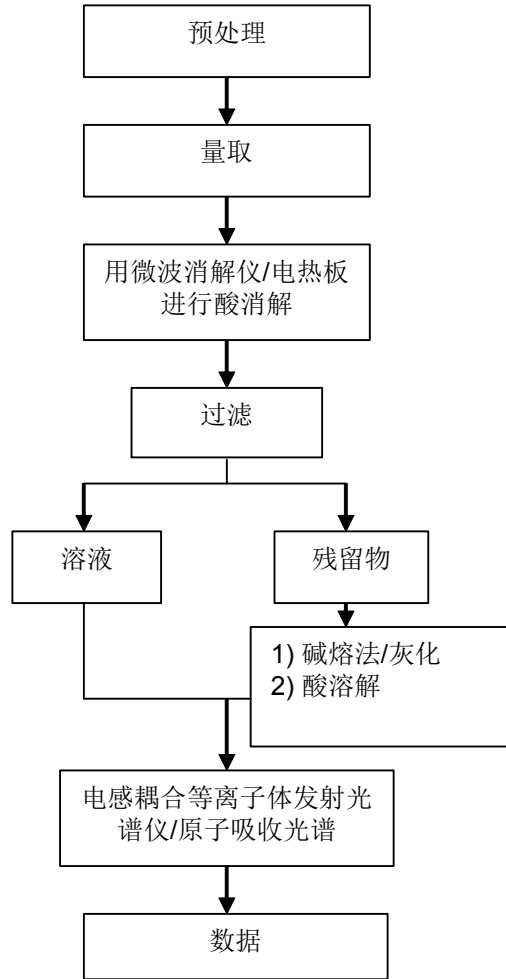


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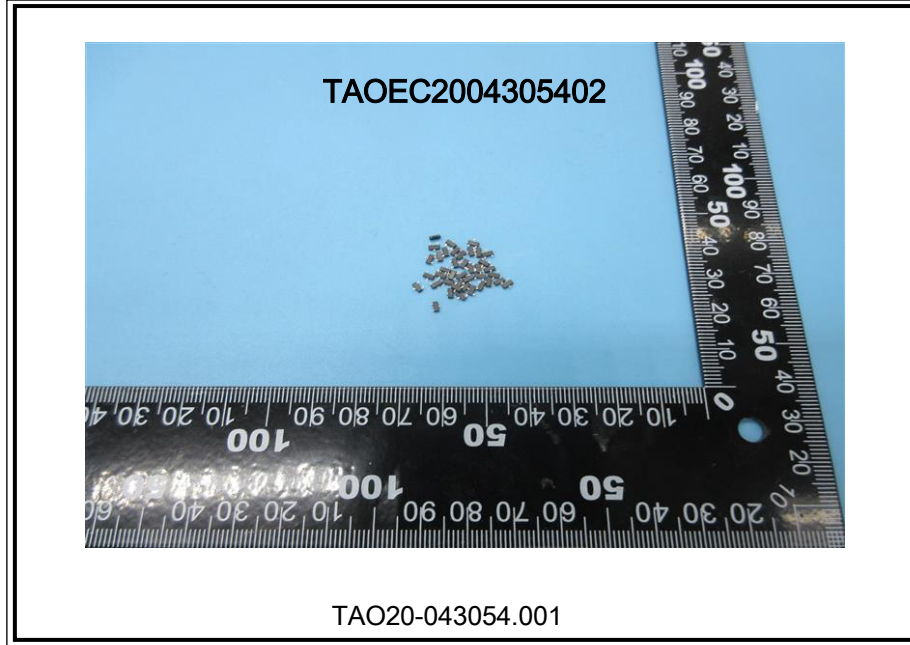
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## 元素(IEC62321) 测试流程图

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