

## 测试报告

No. TSNEC1900114202

日期: 2019年01月28日 第1页,共7页

天水华天科技股份有限公司  
甘肃省天水市秦州区赤峪路88号

以下测试之样品是由申请者所提供及确认: TSSOP028-PINLEAD PLAYING PART(PURE TIN PLATING PRODUCT) base material is Copper Alloy

SGS工作编号: TP19-000495 - TJ

客户参考信息: TSSOP008/TSSOP014/TSSOP016/TSSOP020/TSSOP024/TSSOP028/TSSOP030/TSSOP048/ETSSOP014/  
ETSSOP016//ETSSOP020/ETSSOP024/ETSSOP028/TSSOP-3D008/TSSOP-3D020

样品接收日期: 2019年01月18日

测试周期: 2019年01月18日 - 2019年01月25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

结论: 基于所送样品001进行的测试, 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)、邻苯二甲酸丁苯酯(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))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

基于所送样品002进行的测试, 镉、铅、汞、六价铬的测试结果符合欧盟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(天津)有限公司  
授权签名

Reabeca Zhou周艳  
批准签署人



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日期: 2019年01月28日 第2页,共7页

测试结果:

### 测试样品描述:

样品编号	SGS样品ID	描述
SN1	TSN19-001142.001	黑色本体部分
SN2	TSN19-001142.002	银色引脚部分

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



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日期: 2019年01月28日 第3页,共7页

测试项目	限值	单位	MDL	001
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
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.

IEC 62321系列等同于 EN 62321系列

[http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

(2) 2015年6月4号发表在欧盟官方杂志(官方公报)上的RoHS指令(EU) 2015/863附录II限值中还包括邻苯二甲酸酯BBP, DBP, DEHP和DIBP。新的指令限制了电子电器产品的每一个均一材质中邻苯二甲酸酯含量不得超过0.1%。

(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) DEHP, BBP, DBP 和 DIBP的限制不适用于2019年7月22日前投放市场的电缆及电子电气产品中用于维修、重复利用、功能更新及容量提升的备用配件以及2021年7月22日前投放市场的医疗器械, 包括体外医疗器械, 监控仪表, 包括工业监测和控制仪器。

(5) DEHP、BBP 和 DBP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 和 DBP含量进行了限制。

### 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 62321-7-1:2015, 采用ICP-OES和UV-Vis进行分析。

测试项目	限值	单位	MDL	002
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 <sup>2</sup>	0.10	ND

备注:



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(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

[http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

(2) ▼=a. 当六价铬的浓度高于0.13 µg/cm<sup>2</sup>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/cm<sup>2</sup>)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/cm<sup>2</sup>与0.13 µg/cm<sup>2</sup>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, 样品的六价铬测试结果仅能代表测试时样品含六价铬的状态.

### 总氟,氯,溴,碘

测试方法: 参考ASTM D 7359-13方法. 采用燃烧离子色谱-CIC进行分析。

测试项目	单位	MDL	001
氟(F)	mg/kg	20	ND
氯(Cl)	mg/kg	20	ND
溴(Br)	mg/kg	20	ND
碘(I)	mg/kg	20	ND

备注:

(1) 这项测试由SGS上海化学实验室操作。

### 全氟辛烷磺酸及其衍生物(PFOS)和全氟辛酸(PFOA)

测试方法: 参照CEN/TS 15968:2010方法, 采用LC-MS测试.

测试项目	限值	单位	MDL	001
全氟辛烷磺酸及其衍生物(PFOS) <sup>^</sup>	10	mg/kg	10	ND
全氟辛酸(PFOA)	-	mg/kg	10	ND

备注:

(1) 要求限值依据欧委会法规(EU) No 850/2004的修正指令(EU) No 757/2010 (前身为REACH 法规(EC) No 1907/2006附录XVII的修正指令(EC) No 552/2009第53条)。

(2) <sup>^</sup>:全氟辛烷磺酸(PFOS)及其衍生物包含全氟辛烷磺酸(PFOS)、全氟辛基磺酰胺(PFOSA)、2-(N-乙基全氟辛基磺酰胺)乙醇(EtFOSE)、N-甲基全氟辛烷磺酰胺(MeFOSA)、N-乙基全氟辛烷磺酰胺(EtFOSA)和2-(N-甲基全氟辛基磺酰胺)乙醇(MeFOSE)。

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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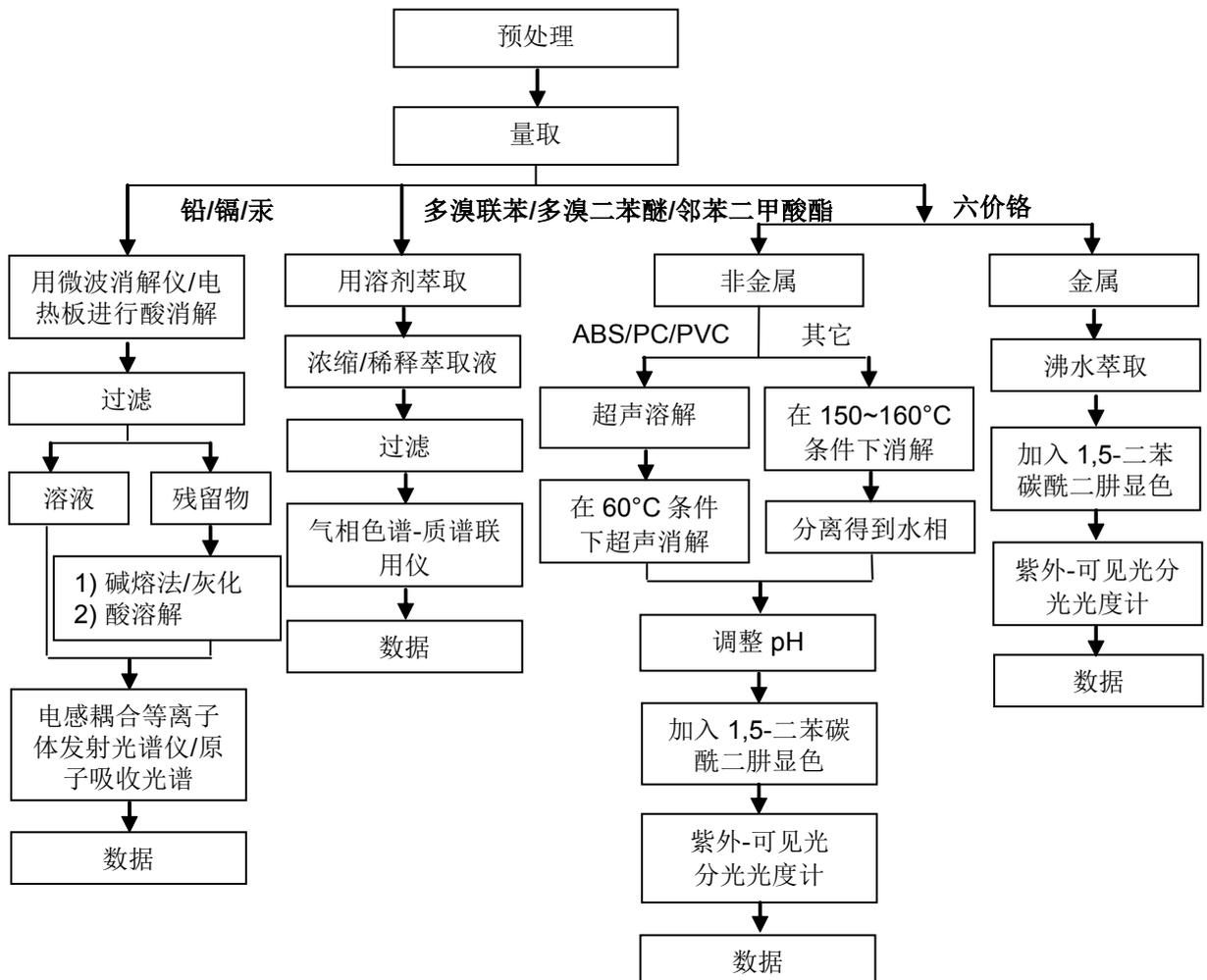
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附件

## Pb/Cd/Hg/Cr<sup>6+</sup>/PBBs/PBDEs/Phthalates 测试流程图

- 1) 分析人员: 王晶/张盼/鞠晓月/陈希涵
- 2) 项目负责人: 王富强/朱敏
- 3) 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/邻苯二甲酸酯测试除外)。



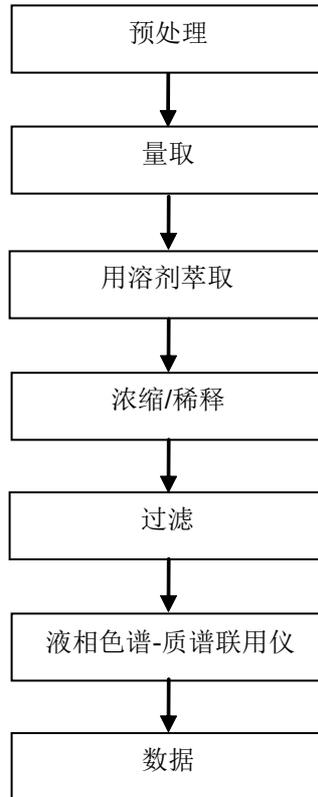
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附件

**PFOS/PFOA 测试流程图**

- 1) 分析人员: 于玉肖
- 2) 项目负责人: 朱敏

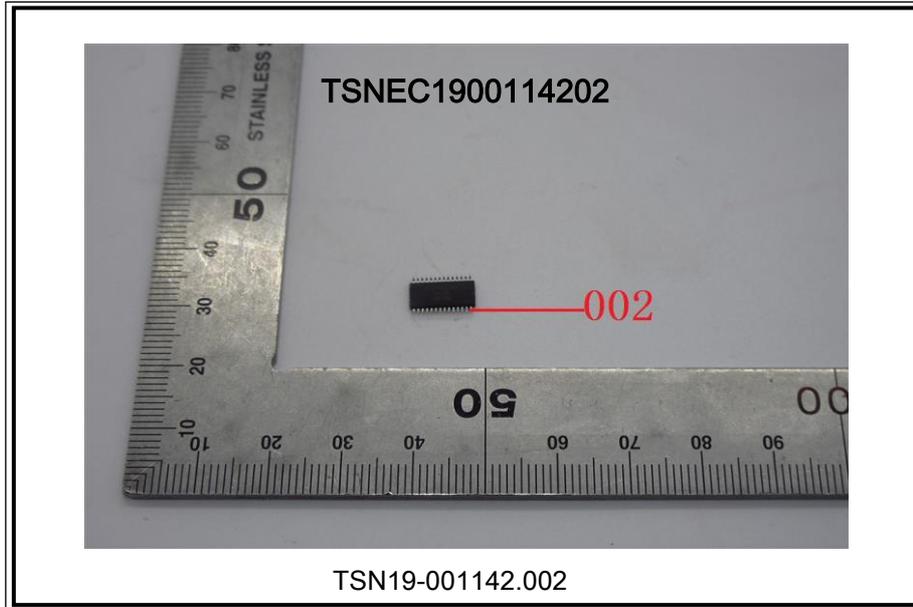
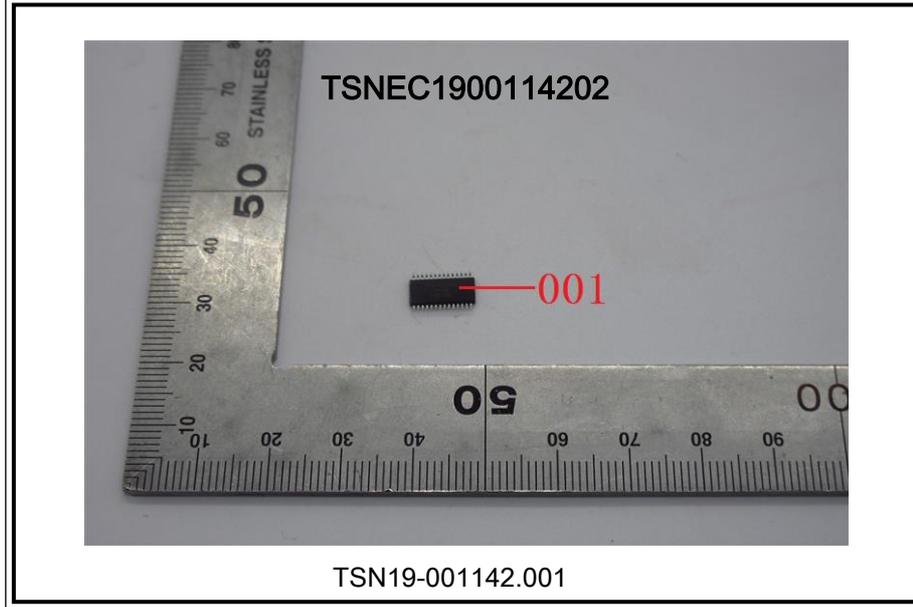


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