

No. SHAEC1513039808

日期: 2015年07月14日 第1页,共13页

优耐铜材(苏州)有限公司 江苏省苏州市国家高新技术开发区金枫路**567**号

以下测试之样品是由申请者所提供及确认: 氨基磺酸镍溶液

SGS工作编号: SP15-022050 - SUZ

样品接收日期: 2015年07月06日

测试周期: 2015年07月06日 - 2015年07月09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: 基于所送样品进行的测试,镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯

醚(PBDEs)的测试结果符合欧盟RoHS指令2002/95/EC的重订指令2011/65/EU附

录Ⅱ的限值要求.

委托样品的富马酸二甲酯(DMF)含量符合欧盟决议(EU) No 412/2012

及1907/2006/EC Reach 附录XVII第61条修正法案

通标标准技术服务(上海)有限公司 授权签名

马广梭

Marry Ma马广媛 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SN1SHA15-130398.004绿色液体

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

测试方法: (1) 参考IEC 62321-5:2013, 用ICP-OES测定镉的含量

(2) 参考IEC 62321-5:2013, 用ICP-OES测定铅的含量

(3) 参考IEC 62321-4:2013, 用ICP-OES测定汞的含量

(4) 参考IEC 62321:2008, 用紫外-可见分光光度计比色法测定六价铬的含量

(5) 参考IEC 62321:2008, 用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚) 的含量

测试项目	限值	<u>单位</u>	<u>MDL</u>	<u>004</u>
镉(Cd)	100	mg/kg	2	ND
铅(Pb)	1000	mg/kg	2	ND
汞(Hg)	1000	mg/kg	2	ND
六价铬(CrVI)	1000	mg/kg	2	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



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测试项目	<u>限值</u>	<u>单位</u>	<u>MDL</u>	<u>004</u>
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
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

#### 备注:

(1) 最大允许极限值引用自指令2011/65/EU附录II.

#### 卤素

测试方法: 参照EN 14582:2007方法测定, 采用IC进行分析.

<u>测试项目</u>	<u>单位</u>	<u>MDL</u>	<u>004</u>
氟(F)	mg/kg	50	ND
氯(CI)	mg/kg	50	ND
溴(Br)	mg/kg	50	ND
碘 <b>(I)</b>	mg/kg	50	ND

#### 元素

测试方法: 参照US EPA 方法3052:1996测定, 采用ICP-OES进行分析.

<u>测试项目</u> <u>单位</u> <u>MDL</u> <u>004</u> 锑(Sb) mg/kg 10 ND

#### 邻苯二甲酸盐(或酯)

测试方法: 参考EN 14372: 2004的方法, 采用GC-MS分析邻苯二甲酸盐(或酯)含量.



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<u>测试项目</u> 邻苯二甲酸二丁酯(DBP)	CAS NO. 84-74-2	<u>单位</u> %	MDL 0.003	<u>004</u> ND	
邻苯二甲酸丁苄酯 (BBP)	85-68-7	%	0.003	ND	
邻苯二甲酸二(2-乙基己基)酯	117-81-7	%	0.003	ND	
(DEHP) 邻苯二甲酸二异丁酯(DIBP)	84-69-5	%	0.003	ND	
邻苯二甲酸二异壬酯 (DINP)	28553-12-0/ 68515-48-0	%	0.01	ND	
邻苯二甲酸二异癸酯 (DIDP)	26761-40-0/ 68515-49-1	%	0.01	ND	
邻苯二甲酸二正辛酯 (DNOP)	117-84-0	%	0.003	ND	

#### 备注:

参考信息: RoHS指令2002/95/EC的重订指令2011/65/EU及其最新修订草案:

- (1) 邻苯二甲酸二(2-乙基已基)酯(DEHP), 邻苯二甲酸丁苄酯(BBP), 邻苯二甲酸二丁酯(DBP) 被列为需优先进行风险评估和考虑进行限制的物质。
- (2) 欧盟委员会根据RoHS 2.0 (2011/65/EU) 修订草案,拟将邻苯二甲酸二(2-乙基已基)酯(DEHP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二丁酯(DBP)、邻苯二甲酸二异丁酯(DIBP)列入RoHS 2.0(2011/65/EU) 附录II中,四项限值均为0.1%。

#### 六溴环十二烷(HBCDD)

测试方法: 参考IEC 62321:2008, 采用GC-MS分析六溴环十二烷含量.

<u>测试项目</u> <u>单位</u> <u>MDL</u> <u>004</u> 六溴环十二烷(HBCDD) mg/kg 10 ND

备注:

(1) 参考信息: RoHS指令2002/95/EC的重订指令2011/65/EU: 六溴环十二烷(HBCDD) 被列为需优先进行风险评估和考虑进行限制的物质.

#### 欧盟决议(EU) No 412/2012 及1907/2006/EC Reach附录XVII第61条-富马酸二甲酯(DMF)

测试方法: 溶剂萃取,采用GC-MS进行分析.

 测试项目
 限值
 单位
 MDL
 004

 富马酸二甲酯(DMF)
 0.1
 mg/kg
 0.1
 ND



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### 全氟辛烷磺酰基化合物(PFOS)和全氟辛酸(PFOA)

测试方法: 参照US EPA 3550C: 2007 方法测定, 采用HPLC-MS进行分析.

单位 测试项目 限值 **MDL** 004 mg/kg ND 10 全氟辛烷磺酰基化合物 (PFOS)- 酸,金属盐和酰胺 10 mg/kg 10 ND 全氟辛酸 (PFOA)

备注:

最大允许限制引用自(EC) No. 850/2004的修订指令欧盟决议(EU) No. 757/2010.

备注:所示结果为湿样品总重量中的含量





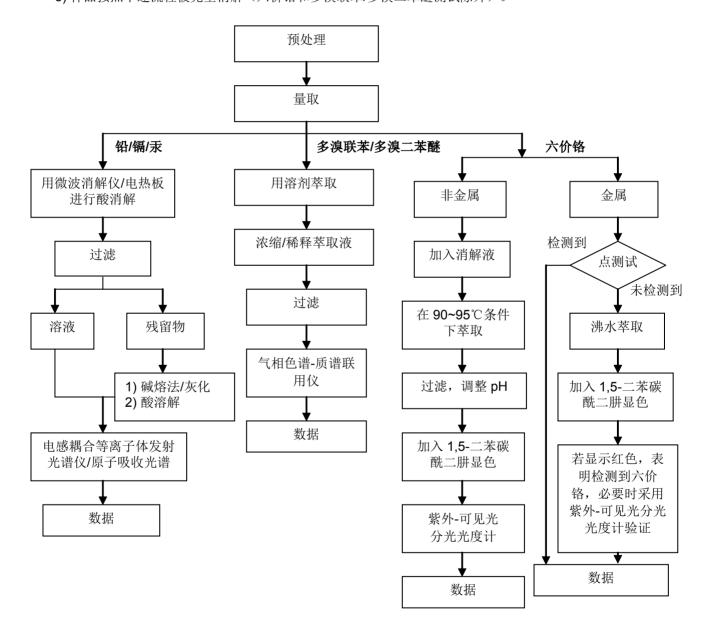
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附件

### RoHS 测试流程图

- 1) 分析人员: 张小波/徐刚/朱增珍/秦兴章
- 2) 项目负责人: 施青/金黎霞/黄婷/陈怀磊
- 3) 样品按照下述流程被完全消解(六价铬和多溴联苯/多溴二苯醚测试除外)。





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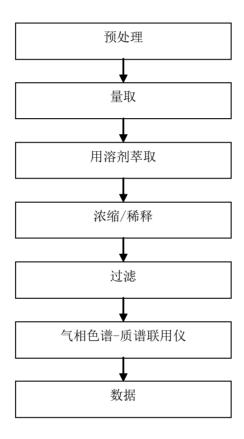
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附件

### Phthalates 测试流程图

1) 分析人员: 高仰景 2) 项目负责人: 马永存







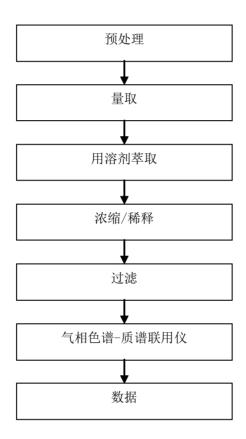
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### HBCDD 测试流程图

1) 分析人员: 徐刚 2) 项目负责人: 黄婷





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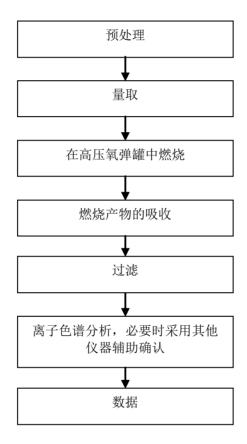
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附件

## Halogen(氧弹法)测试流程图

1) 分析人员: 印字 2) 项目负责人: 李丹







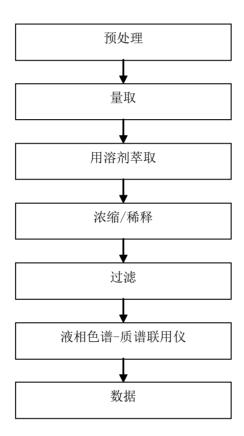
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### PFOS/PFOA测试流程图

1) 分析人员: 杨占君 2) 项目负责人: 马永存







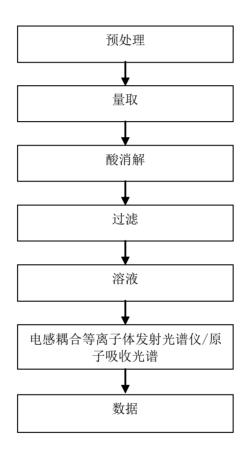
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### 元素测试流程图

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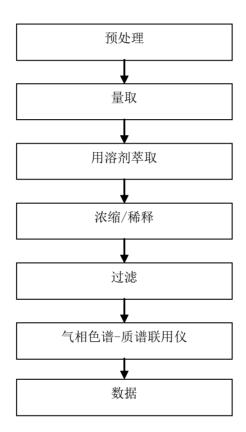
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## DMF(富马酸二甲酯)测试流程图

1) 分析人员: 段莉莎 2) 项目负责人: 黄婷







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