



# 化学品安全技术说明(GHS版SDS)

根据 欧盟第1907/2008 (EU) 号指令第31章编制

报告编号.: SZC12050981781-3C

日期: 2012年5月17日

6 of 9

外观 : 半透明  
形状 : 无资料  
颜色 : 无资料  
气味 : 无资料  
条件的更改  
熔点/熔化范围 : 不适用  
沸点/沸腾范围 : 不适用  
闪点 : 不适用  
分解温度 : 不适用  
可燃性(固体、气体) : 可燃的  
自动点燃 : 该产品不是自燃的  
爆炸上限(%) : 不适用  
爆炸下限(%) : 不适用  
比重(水=1) : 1.14  
在...里的溶解度/和...的溶混性水: 不能溶解或难以溶解  
粘度(ku) : N/A  
物理性质: 无资料

## 10稳定性和反应性

反应性: 稳定

化学稳定性

热分解/要避免的情况

如果没有分解按规定使用和贮存

有害反应可能性: 避免与氧化剂接触

禁止混合物质

氧化剂

有害分解物质

在燃烧时可能产生的有毒气体

燃烧时可产生一氧化碳、二氧化碳和其他有害热分解产物

## 11 毒理学信息

对毒性学影响的信息

急性毒性

与分类相关的LD/LC50值

LD50: 不确定的, 请参考其单一成分

LC50: 不确定的, 请参考其单一成分

主要的刺激性影响

HONGCAI TESTING TECHNOLOGY CO.,LTD

Web: www.hct-test.com Tel: 0755-84616666

Unit D, Penglitai Industrial Estate, Longping Xi Road, Longgang District, Shenzhen

E-mail: hongcai@hct-test.com Service Tel: 400-0066-989 Fax: 0755-89594380



No: 0445198



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7 of 9

## 皮肤腐蚀/刺激

皮肤接触材料可能是有害的

## 眼睛损伤/刺激

这个材料可能会导致眼睛发炎和可能产生深远的眼部病变

## 吞咽

■偶然的摄入可损害身体脏器

致敏性: 没有已知的致敏影响

## 更多毒性的资料

根据有关配制品的一般欧盟分类指南的计算方法 (刊印在最新版本), 该产品没有分类限制

## 12 生态信息

### 12.1 环境数据

不确定的

### 12.2 油和水中的迁移性: 高

### 12.3 持续性/生物降解能力

空气/低

### 12.4 生态毒性

水生动物毒性: 不确定的

生物富集: 不确定的

大气环境: 不确定的

### 额外的生态学资料:

不要排入饮用水系统。不要让产品排入污水排放系统。

PBT (残留性、生物积累性、毒性物质) 及 vPvB (高残留性、高生物积累性物质) 评价结果

PBT: 不适用的

vPvB: 不适用的

## 13 丢弃考虑

### 废弃物处理方法

### 建议

必须遵照政府的规定来特别处理

### 未清理的包装

必须根据官方的规章来丢弃, 可以再使用不受污染的包装物料

## 14 运输信息

### 陆路运输 (跨境)

ADR/RID 级别 : 无资料

HONGCAI TESTING TECHNOLOGY CO.,LTD

Web: www.hct-test.com

Tel: 0755-84616666

Unit D, Penglitai Industrial Estate, Longping Xi Road, Longgang District, Shenzhen

E-mail: hongcai@hct-test.com Service Tel: 400-0066-989 Fax: 0755-89994380



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8 of 9

UN 号码 : 无资料  
内陆船运  
AND/R 级别 : 无资料  
海运 IMDG  
IMDG Class : 无资料  
IMDG 级别 : 无资料  
空运 ICAO-TI 和 IATA-DGR  
ICAO/IATA 级别 : 无资料  
UN 号码 : 无资料  
包装分类 : 无资料  
包装标志 : 无资料  
包装方法 : 纸箱, 胶框等  
用户特别须知: 摆放整齐无挤压受力

## 15规章

对相应纯物质或者混合物的安全、健康及环境法规/法律

国际法律/法规条例

危险和安全信息的要求在标签上

根据EU指引的标签

该产品须遵循欧盟指令/危险物质法规的相关条例

产品的代码和危险标志

N/A

化学安全评估

EEC 分类

Risk 代码

R36/R37/R38

Safety 代码

S24

S25

S26

S37

S39

67/548/EEC指令附件II:有毒物表示

N

Xi

Xn

Risk 警句

对眼睛和皮肤有刺激作用

Safety 警句

避免接触皮肤

避免接触眼睛

不慎与眼睛接触,用大量的水冲洗, 及时联系医生或毒物信息中心

配戴合适的眼镜

穿戴合适的保护衣服和眼镜

环境有害物

刺激

有害



No: 0445200





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9 of 9

## 16 其他资料

以上资讯来源可靠,但每个提醒和建议不可能面面俱到。使用者应结合实际情况,参考各种资料,做出正确的选择,以保证正确的使用和处理,保证使用者的安全与健康,以及环境的保护。

第3节和第9节信息由东莞新东方科技有限公司提供。

### 缩写:

WHMIS: 加拿大工作场所有害物质信息系统

ACGIH: 美国政府工业卫生协会

OHSA: 美国职业卫生与安全管理局。

ADR: 国际公路运输危险货物协议

RID: 国际铁路运输危险货物技术规则

IMDG: 国际海运危险货物规则

IATA: 国际航空交通协会

IATA-DGR: 国际航空交通协会制定的危险货物规则

ICAO: 国际民航组织

ICAO-TL: 国际民航组织制定的危险货物技术指令

LC50: 某动物服用(体重×LC50值(致死浓度值))的毒素会造成50%的死亡

LD50: 某动物服用(体重×LD50值(致死剂量值))的毒素会造成50%的死亡

\*\*\* 文件结束 \*\*\*

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## 说明书摘要

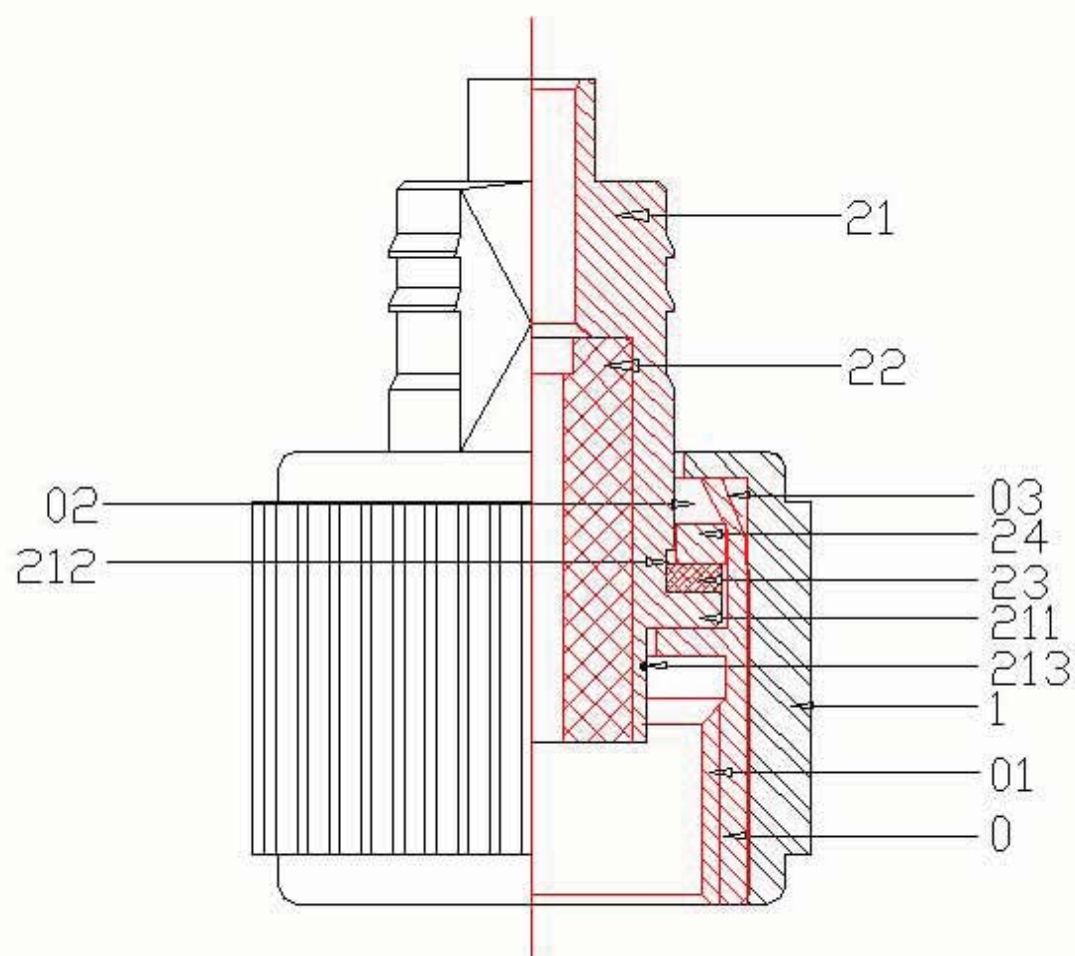
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本实用新型公开了天线摇杆连接器，它涉及无线遥感器技术领域，壳套为两端透空的筒体，外导体穿设在螺牙体的内部，整个外导体为一体结构的中空设置，其一端内部设置有绝缘体，另一端为同轴线材穿引孔，螺牙体内侧上部设置有凹槽，外导体部插接在凹槽的内部，外导体的中下部设置有凸缘，凸缘的上部设置有一凹槽，凹槽上设有一硅胶圈，硅胶圈的上部设置有黄铜垫圈，螺牙体的上部设置有管口。

- 一, 外导体采用一体结构,
- 二, 绝缘体规避 T 型结构,
- 三, 外导体凸缘上部设有一凹槽.

这三点特征有效的降低了产品的成本, 避免了产品与中国公告第 CN 201256178Y 号专利冲突, 还使产品自带扭力更为稳定.

## 摘要附图



## 权 利 要 求 书

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1、天线摇杆连接器，其特征在于：它包含螺牙体(0)、壳套(1)和主体(2)；螺牙体(0)为两端透空的筒体，螺牙体(0)内侧的一端设置有螺牙(01)，螺牙体(0)设置在壳套(1)的内部，壳套(1)为两端透空的筒体，主体(2)穿设在螺牙体(0)的内部，所述的主体(2)分为外导体(21)绝缘体(22)黄铜垫圈(23)硅胶圈(24)，外导体(21)内部为中空设置，且内部设置有绝缘体(22)，绝缘体(22)通过打点(213)而固定，螺牙体(0)内侧上部设置有凹槽(02)，外导体(21)插接在凹槽(02)的内部，外导体(21)的中下部设置有凸缘(211)，凸缘(211)的上部设置有一凹槽(212)，凹槽(212)上设置有一硅胶圈(23)，硅胶圈(23)的上部设置有黄铜垫圈(24)，螺牙体(0)的上部设置有管口(03)。

2、根据权利要求1所述的天线摇杆连接器，其特征在于：所述的螺牙体(0)为铜质螺牙体。

3、根据权利要求1所述的天线摇杆连接器，其特征在于：所述的壳套(1)为塑胶壳套。

# 说明书

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## 天线摇杆连接器

### 技术领域：

本实用新型涉及天线摇杆连接器，属于无线遥感器技术领域。

### 背景技术：

如中国公告第 CN 201256178Y 号专利，提供了一种连接器，其主体部分被分割为第一段部分和第二段部分，其绝缘体要求为 T 型结构。

由该案可以发现，1. 其主体部分被分割为两段，导致产品增加了车床车制成本的产品组装成本。2. 新产品需要规避 T 型结构的绝缘体。

### 实用新型内容：

针对上述问题，本实用新型要解决的技术问题是提供天线摇杆连接器。

本实用新型的天线摇杆连接器，它包含螺牙体、壳套和主体；螺牙体为两端透空的筒体，螺牙体内侧的一端设置有螺牙，螺牙体设置在壳套的内部，壳套为两端透空的筒体，主体穿设在螺牙体的内部，所述的主体包含外导体、绝缘体、黄铜垫圈、硅胶圈，外导体的内部为中空设置，且外导体的内部设置有绝缘体，通过打点方式固定绝缘体，螺牙体内侧上部设置有凹槽，外导体插接在凹槽的内部，外导体的中下部设置有凸缘，凸缘的上部设置有一凹槽，凹槽上设置有硅胶圈，硅胶圈的上部设置有黄铜垫圈，螺牙体的上部设置有管口。

作为优选，所述的螺牙体为铜质螺牙体。

作为优选，所述的壳套为塑胶壳套。

作为优选，所述的外导体为铜质外导体或压铸锌合金外导体。

本实用新型的有益效果为：



1. 它采用外导体为一体的结构, 省去了不必要的多个产品配件的车制和不必要的产品组装, 有效降低了产品成品,

2. 绝缘体采用打点固定的结构, 规避了中国公告第 CN 201256178Y 号专利.

3. 在外导体凸缘上面增加凹槽, 有效的提高的连接品产品的扭力稳定性.

### **附图说明:**

为了易于说明, 本实用新型由下述的具体实施及附图作以详细描述。

图 1 为背景技术中现有的天线摇杆连接器结构示意图,

图 2 为本实用新型的结构示意图,

图 3 为本实用新型的分解结构示意图,

图 4 为本实用新型的剖视图,

图 5 为本实用新型与转接座结合后与天线摇杆结合的立体示意图,

图 6 为本实用新型的效果示意图。

图中: 0-螺牙体; 01-螺牙; 02-凹槽; 03-管口; 1-壳套; 2-主体; 21-第一段部; 211-凸缘; 212-凹槽; 213-打固定点; 22-绝缘体; 23-硅胶; 24-黄铜垫片; 3-转接座; 31-枢接瓣; 4-天线摇杆。

### **具体实施方式:**

为使本实用新型的目的、技术方案和优点更加清楚明了, 下面通过附图中示出的具体实施例来描述本实用新型。但是应该理解, 这些描述只是示例性的, 而并非要限制本实用新型的范围。此外, 在以下说明中, 省略了对公知结构和技术的描述, 以避免不必要地混淆本实用新型的概念。

如图 1-4 所示, 本具体实施方式采用以下技术方案: 它包含螺牙体 0、壳套 1 和主体 2; 螺牙体 0 为两端透空的筒体, 螺牙体 0 内侧的一端设置

有螺牙 01，螺牙体 0 设置在壳套 1 的内部，壳套 1 为两端透空的筒体，主体 2 穿设在螺牙体 0 的内部，所述的主体(2)分为外导体(21)绝缘体(22)黄铜垫圈(23)硅胶圈(24)，外导体(21)内部为中空设置，且内部设置有绝缘体(22)，绝缘体(22)通过打点(213)而固定，螺牙体(0)内侧上部设置有凹槽(02)，外导体(21)插接在凹槽(02)的内部，外导体(21)的中下部设置有凸缘(211)，凸缘(211)的上部设置有一凹槽(212)，凹槽(212)上设置有一硅胶圈(23)，硅胶圈(23)的上部设置有黄铜垫圈(24)，螺牙体(0)的上部设置有管口(03)

进一步的，所述的螺牙体 0 为铜质螺牙体。

进一步的，所述的壳套 1 为塑胶壳套。

进一步的，所述的外导体为铜质外导体或压铸锌合金外导体

本具体实施方式中螺牙体 0 朝向穿设主体 2 的方向，设有凹槽 02，且该凹槽 02 允许该外导体 21 插入，且该外导体 21 的中下段设有一凸缘 211，在该第一段部上的凸缘 211 上面设有一凹槽 212，凹槽 212 上设有硅胶圈 23，在该硅胶圈 23 上设有一黄铜垫圈 24，通过对螺牙体管口 03 缩口固定住黄铜垫圈 24，从而固定住硅胶圈 23 和外导体 21，利用该硅胶圈 23 材质略有弹性的特点，使螺牙体 0 和壳套 1 与主体 2 间形成一定的扭力，如图 5 为本实用新型与一个转接座 3 相互套合的示意图，该转接座 3 的一端部包括二片枢接瓣 31，配合一个连接件可以令其与天线摇杆 4 结合，如图 6 为使天线使用旋转的过程中主体 2 与转接座 3 不松动。

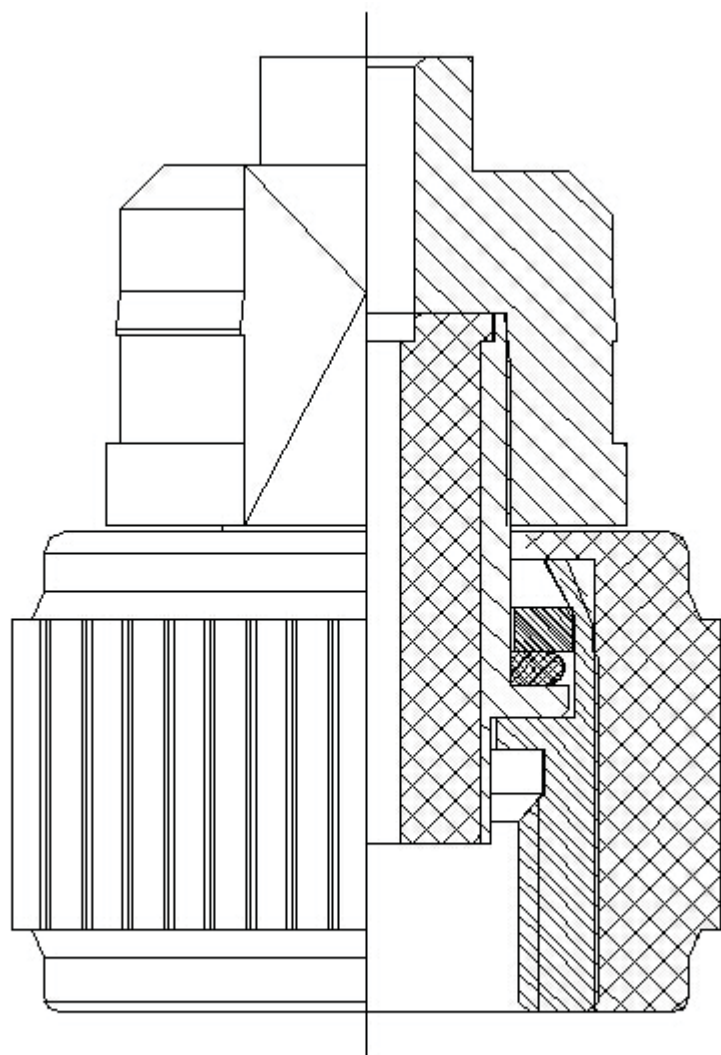
1. 它采用外导体为一体的结构，省去了不必要的多个产品配件的车制和不必要的产品组装工序，有效降低了产品成品，

2. 绝缘体采用打点固定的结构，规避了中国公告第 CN 201256178Y 号专利。

3. 在外导体凸缘上面增加凹槽，有效的提高的连接器产品的扭力稳

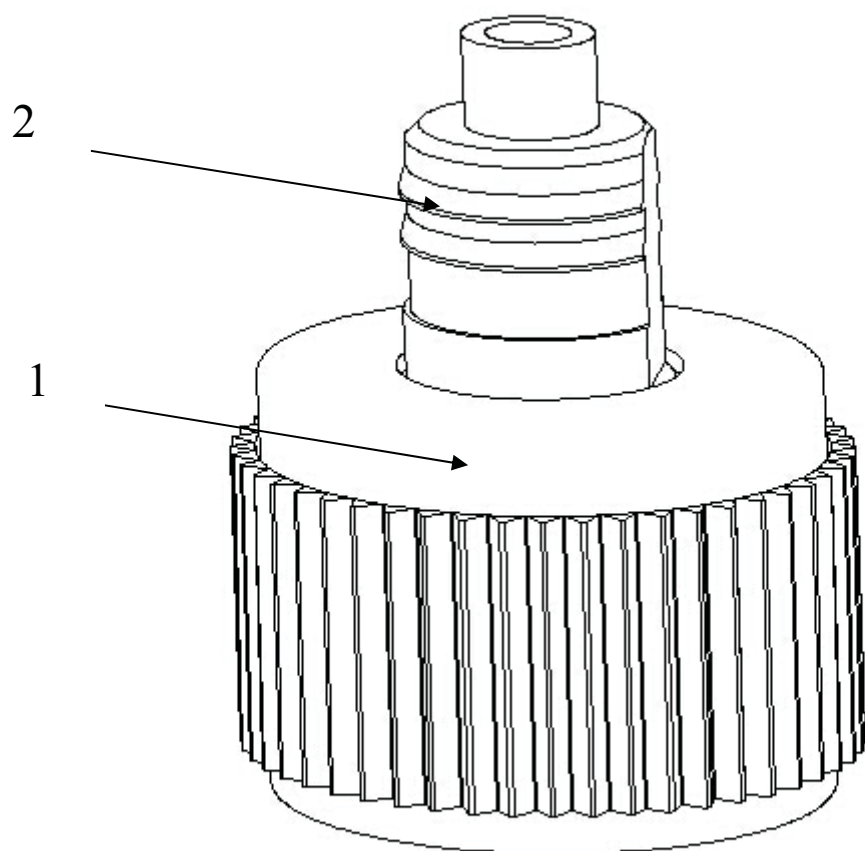
定性.

以上显示和描述了本实用新型的基本原理和主要特征和本实用新型的优点。本行业的技术人员应该了解，本实用新型不受上述实施例的限制，上述实施例和说明书中描述的只是说明本实用新型的原理，在不脱离本实用新型精神和范围的前提下，本实用新型还会有各种变化和改进，这些变化和改进都落入要求保护的本实用新型范围内。本实用新型要求保护范围由所附的权利要求书及其等效物界定。



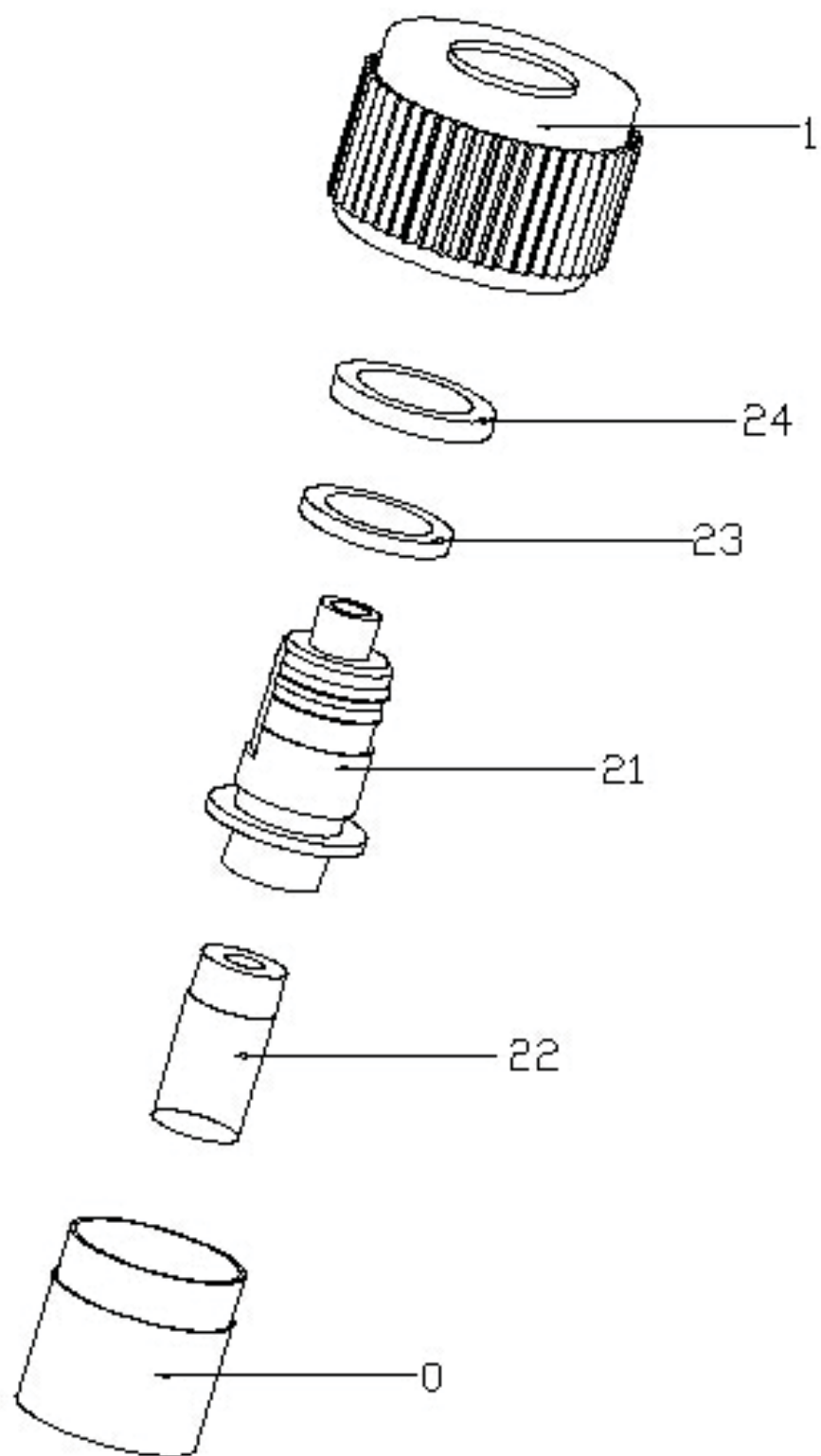
图一



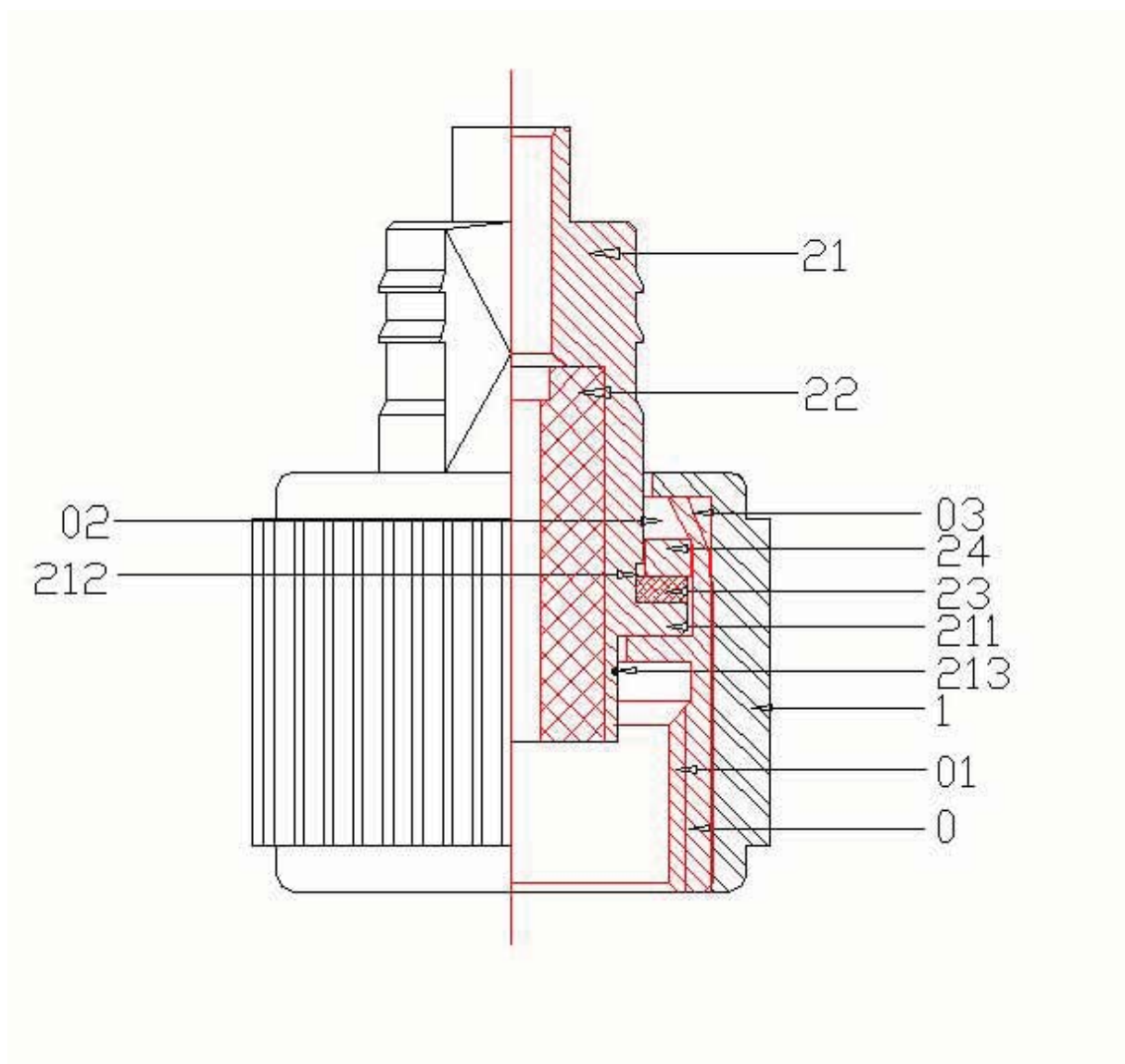


从

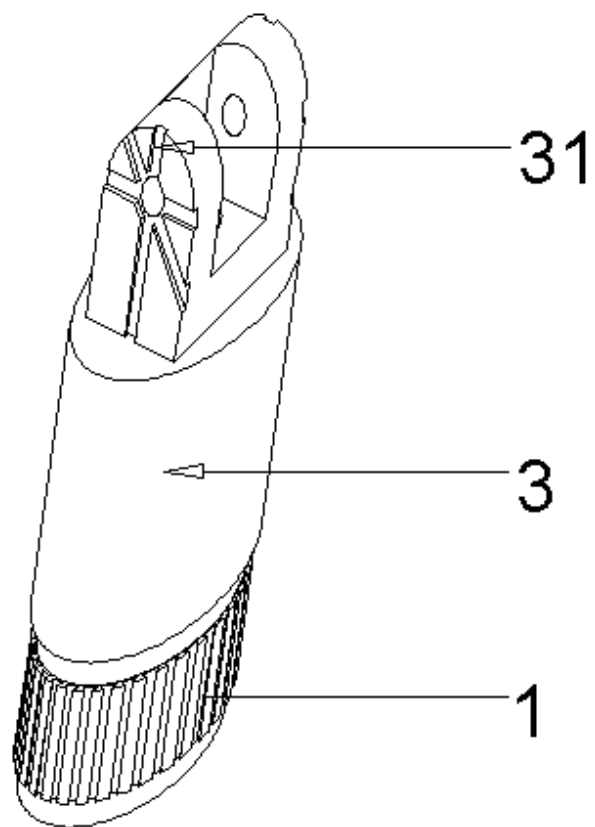
图二



图三



图四



图五



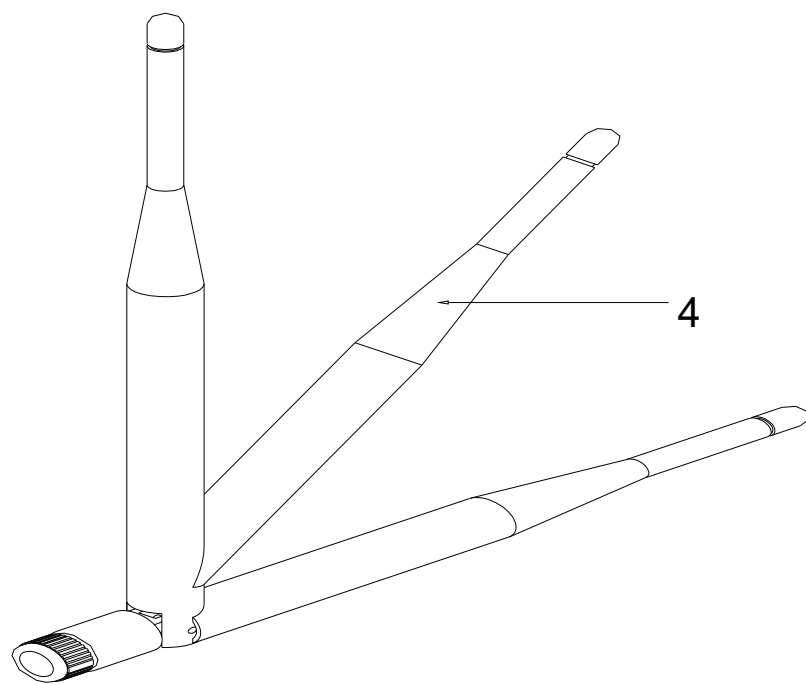


图 6



# 中华人民共和国国家知识产权局

518000



XQ26873501411

广东省深圳市福田区莲花北村宝莲大厦1栋18D

卞小磊

发文日:

2015年01月21日

2HS



申请号或专利号: 201420698027.8

发文序号: 2015011600078750

申请人或专利权人: 深圳市玉富同电子科技有限公司

发明创造名称: 天线摇杆连接器

## 办理登记手续通知书

根据专利法实施细则第54条及国家知识产权局第75号公告的规定, 申请人应当于2015年04月07日之前缴纳以下费用:

专利登记费	200.0 元
第1年度年费	600.0 元
专利证书印花税	5.0 元
已缴费用	0 元
应缴费用	805.0 元

无费减 (减缓标记)

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提示:

费用可以直接到国家知识产权局缴纳, 也可以通过邮局或者银行汇付。如通过邮局汇付, 收款人姓名: 国家知识产权局专利局收费处; 商户客户号: 110000860。如通过银行汇付, 开户银行: 中信银行北京知春路支行; 户名: 中华人民共和国国家知识产权局专利局; 账号: 7111710182600166032。

汇款时应当准确写明申请号、费用名称 (或简称) 及分项金额。未写明申请号和费用名称 (或简称) 的视为未办理缴费手续。

审查员: 姚燕

审查部门: 专利局初审及流程管理部

联系电话: 62356655



200602  
2010.4

纸件申请, 回函请寄: 100088 北京市海淀区蓟门桥西土城路6号 国家知识产权局专利局受理处  
电子申请, 应当通过电子专利申请系统以电子文件形式提交相关文件。除另有规定外, 以纸件等其他形式提交的文件视为未提交。



# 中华人民共和国国家知识产权局

518000

广东省深圳市福田区莲花北村宝莲大厦1栋18D  
卞小磊

发文日:

2015年01月21日

115



申请号或专利号: 201420698027.8

发文序号: 2014123100574370

申请人或专利权人: 深圳市玉富同电子科技有限公司

发明创造名称: 天线摇杆连接器

## 授予实用新型专利权通知书

1. 根据专利法第40条及实施细则第54条的规定, 上述实用新型申请经初步审查, 没有发现驳回理由, 现作出授予实用新型专利权的通知。

申请人收到本通知书后, 应当按照办理登记手续通知书的规定办理登记手续。

申请人办理登记手续后, 国家知识产权局作出授予实用新型专利权的决定, 颁发相应的专利证书, 同时予以登记和公告。

期满未办理登记手续的, 视为放弃取得专利权的权利。

2. 授予专利权的实用新型专利申请是以申请人于申请日 2014 年 11 月 20 日提交的文本为基础。

3. 审查员依职权修改内容为:

注: 在本通知书发出后收到的申请人主动修改的申请文件, 不予考虑。

审查员: 李光磊


审查部门: 专利审查协作北京中心实用新型审查部

联系电话: 010-82246199

220601  
2010.2

纸件申请, 回函请寄: 100088 北京市海淀区前门桥西土城路6号 国家知识产权局专利局受理处收  
电子申请, 应当通过电子专利申请系统以电子文件形式提交相关文件。除另有规定外, 以纸件等其他形式提交的文件视为未提交。



型号 Type		RF-1.13/50	料号 P/N	SY113/50-020(Gray)	
结构图 Structure drawing					
结构特性 Structure characteristics					
结构 Structure		项目 Item		标准值 Standard value	
①内导体 Inner conductor	材料 Material		镀银铜线 Silverplated copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)		7/0.083		
	(绞合)标称外径(mm) (Intertwist)NOM.O.D.(mm)		0.249±0.02		
②绝缘层 Insulation	材料 Material		聚全氟乙丙烯 FEP		
	颜色 Color		透明 Clarity		
	标称外径(mm) NOM.O.D.(mm)		0.7±0.03		
③外导体 Outer conductor	材料 Material		镀锡铜线 Tinned copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)		4/0.05		
	标称外径(mm) NOM.O.D.(mm)		0.92±0.05		
	覆盖率(%) Coverage ratio(%)		90±5		
④护套层 Jacket	材料 Material		聚全氟乙丙烯 FEP		
	颜色 Color		灰 Gray		
	标称外径(mm) NOM.O.D.(mm)		1.13±0.05		
电性能特性 Electrical characteristics					
项目 Item		标准值 Standard value		项目 Item	标准值 Standard value 单位 Unit:dB/m
电容(pF/m) Capacitance(pF/m)		98		衰减 Attenuation	1GHz
速率(%) Velocity(%)		70			2GHz
阻抗(Ω) Impedance(Ω)		50±2			3GHz
驻波比 Standing wave ratio		≤1.3@0~6GHz			4GHz
最大工作电压(V) Max.operating voltage(V)		1000			5GHz
最大工作频率(GHz) Max.operating frequency(GHz)		6			6GHz
可靠性 Dependability					
项目 Item		单位 Unit		标准值 Standard value	
最小弯曲半径(一次) Min.bending radius static		mm		4	
最小弯曲半径(重复) Min.bending radius repeated		mm		—	
工作温度范围 Operating temperature		℃		-55~+200	
包装 Packing					
项目 Item		单位 Unit		标准值 Standard value	
包装方式 Packing mode		/		纸盘 Papery plate	
每盘长度 The length of each plate		m		500	
每盘接头数 Each connector plate number		/		≤3	
每段最短长度 The shortest length of each root		m		≥10	
使用提示 Use tips					
存储环境 Storage environment		温度：30℃以下；湿度：20%~65%			
最佳保存周期 The best save cycle		2个月；2个月以上作业性下降，如上锡效果变差,但电性能不受影响。夏季高温高湿环境开剥后需尽快流转			
加工温度 Processing temperature		260℃的极限情况下，可短时间承受；300℃以上分子通常带有的等端基会分解；400℃以上发生显著的热分解			
铁氟龙收缩 Teflon Shrink		固有材料特性。绝缘：0.2mm以下；护套：0.3mm以下			
护套窜动 Jacket traverse		加工长度（护套残留长度）低于5cm易发生			
其他 Other					
特殊加工工艺，请与供方协商后使用					



神宇通信科技股份有限公司

## 材 质 证 明

编订日期：2011-12-26

公司名稱 Company Name	神宇通信科技股份有限公司	产品名称 Product Name	同轴电缆 Coaxial Cable	产品重量 Product Weight	3.017 g/m
神宇料号 SY Product No.	SY113/50-001	客户料号 Customer No.		E-Mail	<a href="mailto:shenyu@shenyucable.com">shenyu@shenyucable.com</a>
填写人部门 Dept.	品保部 QA	姓名 Name	徐君昱	聯絡電話 Telephone	0510-86279705

茲證明向貴公司銷售的產品和半成品中，使用之原材料，包裝材料以及生產工程中，不含有 利慶科技(苏州)有限公司 規定的相關禁止使用物質。另，向貴公司報告成品、半成品中使用的原材料、包裝材料以及生產工程中的添加劑成分如下所述：

## 使用材料(Use material)

項次	零件名稱	原料廠	材質	重量(g)	組成成份	含百分比	化驗報告NO.	限用物質含量(單位: PPM)															
Item	Material Name	Vendor	Substance	Weight	Substance	Substance	Test Report No.	鉛	鎘	汞	六價鉻	PBB	PBD E	PCBs	多氯萘PC	PCT	CP	甲 醛	石綿	AZO 偶氮類	有 機 錫	PV C	
					Composition	Amount		(Pb)	(Cd)	(Hg)	(Cr+6)							Asbestos					
1	导体	恒丰	镀银铜线	0.319	铜	10.36%	RLSHD000593720003	ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
					银	0.21%																	
2	绝缘	大金	FEP	0.757	FEP	25.09%		ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3	编织	震雄	镀锡铜线	1.198	铜	38.52%		ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
					锡	1.19%																	
4.1	护套	大金	FEP	0.743	FEP	22.90%		ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.2	色母料(灰)	寇兰	FEP		FEP	1.72%																	

使用材料請貼圖示於此欄，並標項次：

化驗報告注意事項：



- (1) 須為通過ISO 17025認證過之公司所提供之化驗報告資料 (如SGS、ITS、ETC、BVQI )
- (2) 有效期限為一年
- (3) 報告內容&文字必須清晰，易辨別 (不可模糊不清)
- (4) 限用物質含量之未測項目請填” N/A ”，  
ND. =Not Detected (報告限定值)

蓋 章 處



## AVLV2.E318898 Appliance Wiring Material - Component

[Page Bottom](#)

### Appliance Wiring Material - Component

[See General Information for Appliance Wiring Material - Component](#)

#### SHENYU COMMUNICATION TECHNOLOGY INC

E318898

275 E WAIHUAN RD

JIANGYIN, JIANGSU 214400 CHINA

Table of Recognized Styles							
Single-conductor, thermoplastic insulation.							
<a href="#">1226</a>	<a href="#">1333</a>	<a href="#">1591</a>	<a href="#">1723</a>	<a href="#">1857</a>	<a href="#">1886</a>	<a href="#">10064</a>	<a href="#">10518</a>
<a href="#">1227</a>	<a href="#">1354</a>	<a href="#">1592</a>	<a href="#">1726</a>	<a href="#">1858</a>	<a href="#">1887</a>	<a href="#">10072</a>	<a href="#">11149</a>
<a href="#">1330</a>	<a href="#">1371</a>	<a href="#">1708</a>	<a href="#">1727</a>	<a href="#">1859</a>	<a href="#">1901</a>	<a href="#">10111</a>	
<a href="#">1331</a>	<a href="#">1538</a>	<a href="#">1709</a>	<a href="#">1766</a>	<a href="#">1860</a>	<a href="#">1927</a>	<a href="#">10248</a>	
<a href="#">1332</a>	<a href="#">1577</a>	<a href="#">1710</a>	<a href="#">1847</a>	<a href="#">1882</a>	<a href="#">10011</a>	<a href="#">10362</a>	

Marking: Company name, voltage rating, temperature rating, conductor size, conductor material if other than copper, and use.  
[Last Updated](#) on 2010-11-09

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An independent organization working for a safer world with integrity, precision and knowledge.



神宇通信科技股份有限公司

物 质 安 全 资 料 表 (MSDS)

一、物品和厂商资料

中英文物品名称:	同轴电缆 Coaxial Cable
物品编号:	Normal 系列
制造商或供应商名称、地址及电话:	神宇通信科技股份有限公司 江阴市东外环路 275 号/0510-86279705
紧急联络电话/传真电话:	0510-86278808/0510-86279701

二、成分辨识资料

纯物质:

中英文名称:	聚全氟乙丙烯 Fluorinated Ethylene Propylene 镀银铜线 Silverplated Copper 镀锡铜线 Tinned Copper
同义名称:	FEP/SC/TX
化学文摘社登记号码 (CAS No.):	FEP: 25067-11-2; Cu: 7440-50-8; Ag: 7440-22-4; Sn: 7440-31-5;
危害物质成分 (成分百分比):	/

危害物质:

危害物质	浓度或浓度范围（单位：ppm）	
铅及其化合物 Pb	<1000	
镉及其化合物 Cd	<100	
汞及其化合物 Hg	<1000	
六价铬以及化合物 Cr	<1000	
卤素	氯 Cl<900	氯 Cl+溴 Br<1500
	溴 Br<900	
SVHC 15 种物质	禁止使用	

三、危害辨识资料

最重要危害效应:	健康危害效应:	在 260℃ 以上, 可能会有吸入分解气体的危险, 一定要安装排气装置。
	环境影响:	要按照废弃物处理及清扫法律法规处理, 绝对不可燃烧。
	物理性及化学性危害:	物理化学性能稳定, 不易降解, 不得擅自填埋。
	特殊危害:	无。
主要症状:	对人的神经系统产生损害。	
物品危害分类:	大气和水源。	

四、急救措施

不同暴露途径之急救方法：	吸入：	到空气流通处换气。
	皮肤接触：	无。
	眼睛接触：	无。
	食入：	不消化，排出。
最重要症状及危害效应：	无。	
就急救人员之防护：	对流换气。	
对医师之提示：	吸氧。	

五、灭火措施

适用灭火剂：	通用。
灭火时可能遭遇之特殊危害：	避免分解气体吸入。
特殊灭火程序：	无。
消防人员之特殊防护装备：	防毒面具。

六、泄漏处理方法

个人应注意事项：	粉状树脂。
环境注意事项：	不可填埋。
清理方法：	要按废弃物处理及清扫法律法规处理，绝对不可燃烧。

七、安全处置与储存方法：

处置：	避免高温和火源接触。
储存：	通风干燥处。

八、暴露预防措施

工程控制：	无。	
控制参数：	八小时日时常平均容许浓度/ 短时间时量平均容许浓度/ 最高容许浓度：	无。
	生物指标：	无。
个人防护措施：	呼吸防护：	安装排气装置。
	手部防护：	无。
	眼睛防护：	无。
	皮肤及身体防护：	无。
卫生措施：	应将衣服上附着的灰尘抖落，手脸洗净，不要让其附着在香烟上。	

九、物理及化学性质

物质状态：	固体。	形状：	透明颗粒。
颜色：	透明。	气味：	无。
PH 值：	7。	沸点/沸点范围：	/
分解温度：	360℃。	闪火点：	/



自然温度:	/	爆炸界限:	/
蒸气压:	/	蒸气密度:	/
密度:	2.2 g/cm <sup>3</sup> 。	溶解度:	/

#### 十、安全性及反应性:

安全性:	很稳定。
特殊情况下可能之危害反应:	高温或燃烧分解气体对人体神经系统的损害。
应避免之状况:	绝对不可燃烧。
应避免之物质:	金属钠及其强酸的混合物。
危害分解物:	气体及粉尘。

#### 十一、毒性资料

危毒性:	/
局部效应:	/
致敏效应:	/
慢毒性或长期毒性:	/
特殊效应:	/

#### 十二、生态资料

可能之环境影响/环境流布:	不降解, 禁填埋。
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#### 十三、废弃处置方法

废弃处置方法:	按废弃物处理及清扫法律法规要求送专业资质公司处置。
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#### 十四、运送资料

国际运送规定:	/
联合国编号:	/
国内运送规定:	无。
特殊运送方法及注意事项:	无。

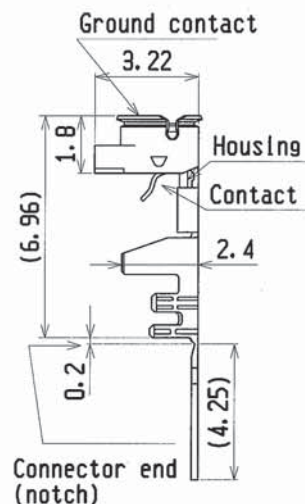
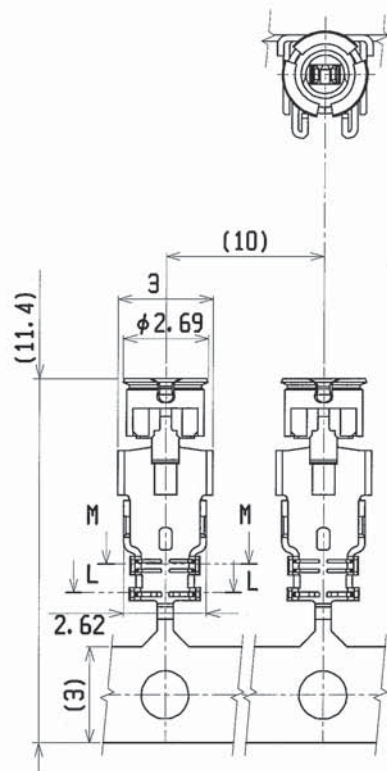
#### 十五、法规资料

适用法规:	遵循欧盟 REACH 法规相关要求。
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#### 十六、其他资料

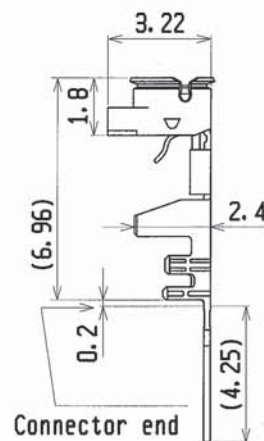
参考文献:	杜邦产品说明/SONY 限用物质标准。
制表单位:	名称: 神宇通信科技股份有限公司 地址/电话: 江阴市东外环路 275 号/TEL: 0510-86279705
制表人:	职称: 品保经理 姓名: 葛晓磊
制表日期:	2009/7/22

PART NO.  
20278-...R-...



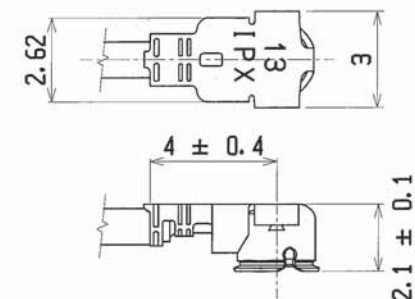
Part No. 20278-101R-08  
20278-102R-08  
20278-101R-13  
20278-102R-13  
20278-101R-32  
20278-102R-32

For hand tool  
(with notch)



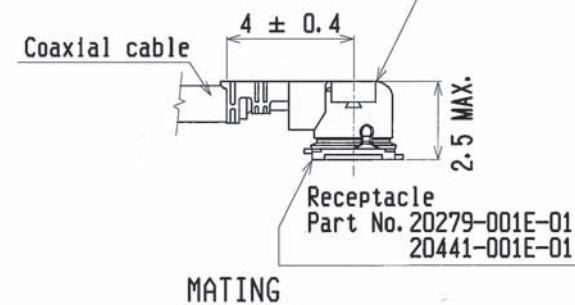
Part No. 20278-111R-08  
20278-112R-08  
20278-111R-13  
20278-112R-13  
20278-111R-32  
20278-112R-32

For semi auto  
termination machine  
(without notch)



Cable Ass'y

Plug  
P/N 20278-1...R-08  
P/N 20278-1...R-13  
P/N 20278-1...R-32

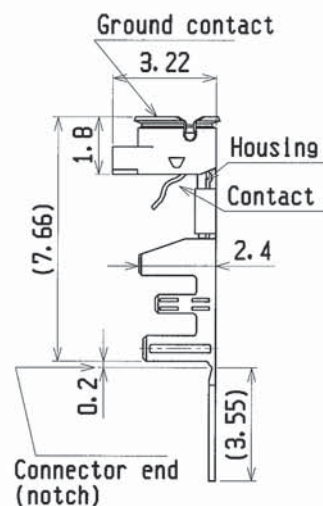
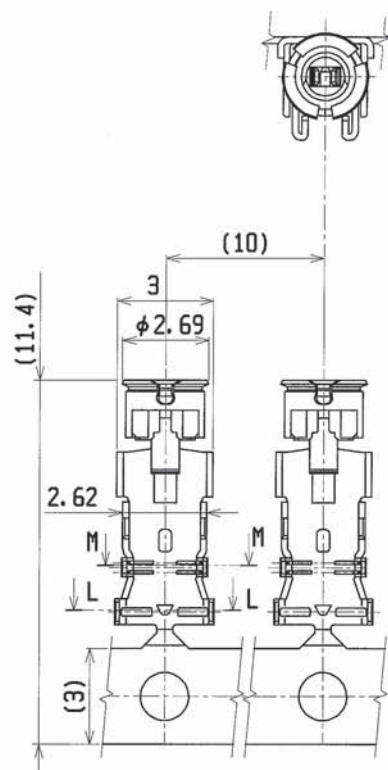


MATING

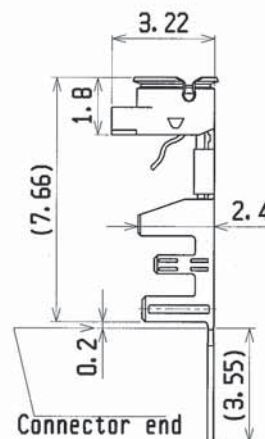
GENERAL TOLERANCE	
6 MAX.	±0.2
6 OVER MAX. 30	±0.3
30 OVER MAX. 120	±0.5
ANGLE	±2°

19C 208056	K.O	Feb/04/08	EK	DESIGN'D BY	DATE
18C 207346	K.O	Jul/10/08	E.K	K. Ohbayashi	JUN/13/01
17C 205233	K.O	May/18/05	T.H	CHK'D BY	DATE
16C 205024	K.O	Jan/20/05	T.H		
15C 204398	K.O	Nov/12/04	T.H	APP'D BY	DATE
REV	ECN	BY	DATE	K. Katabuchi	JUN/13/01
REV. RECORD				CUSTOMER	PROJECTION
SERIES No.				COPY	SCALE UNIT DWG. No.
2814					6/1 mm 20278
TITLE					SHEET REV.
MHF series micro coaxial connector plug vertical (ground contact : gold plating)					1/4 19C
I-PEX Interconnect and Packaging Electronics TOKYO, JAPAN					General

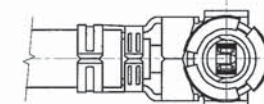
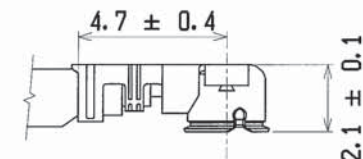
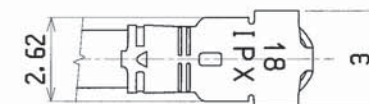
PART NO.  
20278-...R-...



Part No. 20278-101R-18  
20278-102R-18  
For hand tool  
(with notch)

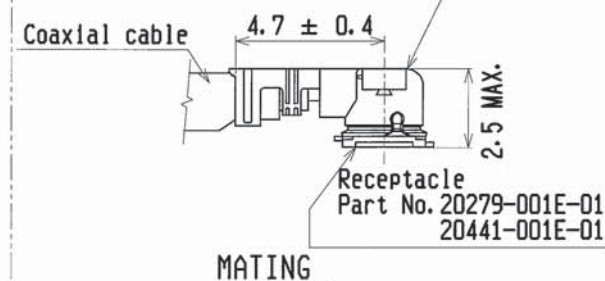


Part No. 20278-111R-18  
20278-112R-18  
For semi auto  
termination machine  
(without notch)



Cable Ass'y

Plug  
P/N 20278-1...R-18



Receptacle  
Part No. 20279-001E-01  
20441-001E-01

MATING

GENERAL TOLERANCE		
6 MAX.	±0.2	
6 OVER MAX. 30	±0.3	
30 OVER MAX. 120	±0.5	
ANGLE	±2°	

<div style="display: flex; justify-content: space-between;"> <div> <p>DESIGN D BY _____ DATE _____</p> <p>CHK D BY _____ DATE _____</p> <p>APP D BY _____ DATE _____</p> </div> <div> <p><b>I-PEX</b> Interconnect and Packaging Electronics TOKYO, JAPAN</p> </div> </div>					TITLE	
					MHF series micro coaxial connector plug vertical (ground contact : gold plating)	
					General	
					DWG. No.	
20278						
SHEET REV.						
2/4 19C						

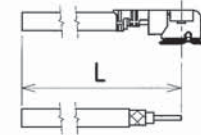


Part No. of non halogen free type	20278-101R-08 20278-111R-08	20278-101R-13 20278-111R-13	20278-101R-32 20278-111R-32	20278-101R-18 20278-111R-18
Part No. of halogen free type	20278-102R-08 20278-112R-08	20278-102R-13 20278-112R-13	20278-102R-32 20278-112R-32	20278-102R-18 20278-112R-18
Housing color	White	Black	Black	White
Applicable cable nominal dimension	<p>2.09±0.1 1.25±0.1 1.16±0.1 φ0.81 Nominal (φ0.65) φ0.4 Nominal ANG#36(7/0.05)</p> <p>※ NOTE-1</p>	<p>2.09±0.1 1.25±0.1 1.16±0.1 φ1.13 Nominal (φ0.93) φ0.68 Nominal ANG#32(7/0.08)</p> <p>※ NOTE-1</p>	<p>2.09±0.1 1.25±0.1 1.16±0.1 φ1.32 Nominal (φ1.12) φ0.66 Nominal ANG#32(7/0.08)</p> <p>※ NOTE-1</p>	<p>2.09±0.1 1.25±0.1 1.16±0.1 φ1.8 Nominal (φ1.35) φ0.84 Nominal ANG#30(7/0.102)</p> <p>※ NOTE-1</p>
Braided shield of Outer conductor 外部導体の編組	Single / 1重編組	Single / 1重編組	Double / 2重編組	Single / 1重編組
P/N of hand Tool	90187-008C	90187-013C	90187-032C	90233-018
P/N of semi auto termination machine	90213-008C	90213-013C	90213-032C	90232-018
Sect. M-M	<p>1.68 1.12</p>	<p>2.24 1.48</p>	<p>2.29 1.56</p>	<p>2.71 1.9</p>
Sect. L-L	<p>1.72 1.19</p>	<p>2.28 1.55</p>	<p>2.37 1.71</p>	<p>3.1 2.26</p>
Crimp Height	CH-1	1.34~1.40	1.34~1.40	1.34~1.40
	CH-2	0.76~0.84	1.06~1.14	1.41~1.49
	CH-3	0.85~0.97	1.15~1.35	1.70~1.80

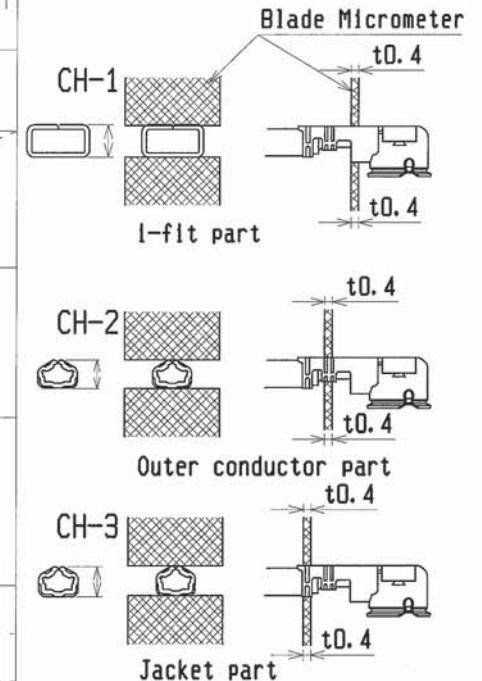
NOTE-1

中心導体, 外部導体への半田コーティングは不可  
Must not use solder coated  
Inner conductor and outer conductor.

Cable cut length



Crimp Height



DESIGN'D BY		DATE	
CHK'D BY		DATE	
APP'D BY		DATE	
REV	ECN	BY	DATE
APP			
REV. RECORD			
SERIES No.		2814	
CUSTOMER COPY		PROJECTION	SCALE UNIT DWG. No.
			3/4 19C

**I-PEX** Interconnect and Packaging Electronics TOKYO, JAPAN

TITLE: MHF series micro coaxial connector plug vertical (ground contact : gold plating)

General

20278

## Notes

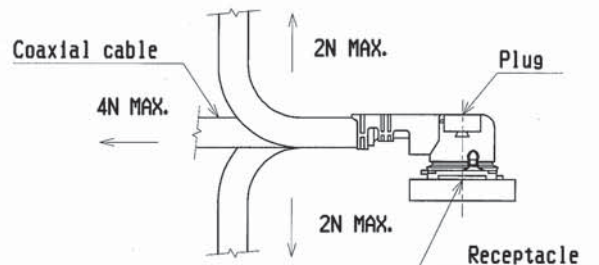
### 1. Material

- (1) Housing : PBT , UL94V-0
- (2) Contact  
phosphor bronze  
gold plating  $0.1\mu\text{m}$  MIN.  
over nickel  $1.27\mu\text{m}$  MIN.
- (3) Ground contact  
phosphor bronze  
gold plating  $0.05\mu\text{m}$  MIN.  
over nickel  $1.27\mu\text{m}$  MIN.

### 2. Packing : reel

3. Mating partner part No.  
: 20279-001E-01, 20441-001E-01

### 4. Permissible load of cable at mating



### 5. Suggestions for mating & unmating operation.

#### 5-1 Mating.

Please mate the connector straightly to vertical direction as much as possible, adjusting the mating axis of plug and receptacle. As excessive slant angle mating may break the connector, please don't do it.

### 1. 材料

- (1) ハウジング: PBT, UL94V-0
- (2) コンタクト  
りん青銅  
金メッキ  $0.1\mu\text{m}$  MIN.  
下地 ニッケル  $1.27\mu\text{m}$  MIN.
- (3) グランドコンタクト  
りん青銅  
金メッキ  $0.05\mu\text{m}$  MIN.  
下地 ニッケル  $1.27\mu\text{m}$  MIN.

### 2. 梱包 : リール

3. カン合相手 part No.  
: 20279-001E-01, 20441-001E-01

### 4. コネクタカン合後のケーブルに対する荷重

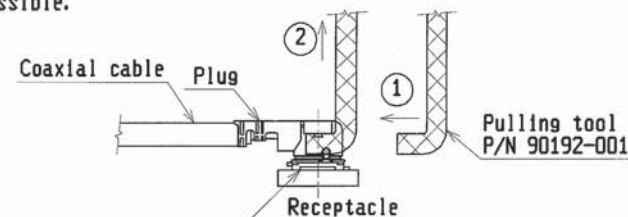
### 5. コネクタカン合時および抜去時の注意

#### 5-1 コネクタ挿入時

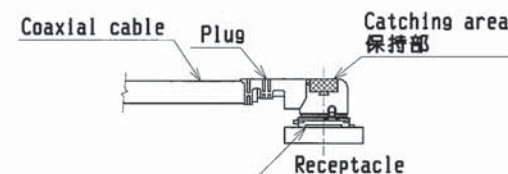
PlugとReceptacleのカン合軸を合わせ、できるだけ垂直に挿入して下さい。極端な斜め挿入は行わないで下さい。コネクタ破損の原因となりますので、過度なこじり挿入は行わないで下さい。

### 5-2 Unmating.

- (1) In case of unmating by pulling tool.  
Please use the pulling tool as the following drawing, and please pull plug to vertical direction as directly as possible.



- (2) In case of unmating directly by hand  
Please catch the catching area of plug, and please pull plug to vertical direction as directly as possible.



### 5-3 Crimp over standards of outer conductor

Standards: Less than 10% from total numbers of outer conductor  
(Numbers of outer conductor's crimp over from outer conductor's barrel)

### 5-4 Caution about Heat shrinkage tubes

Please be careful not to melt housing when using heat shrinkage tubes. It will become cause of open circuit.

### 6. This is 'Pb-free' connector.

### 5-2 コネクタ抜去時

- (1) 抜去ジグを用いる場合  
下図のようにできるだけ垂直に引き抜いて下さい。

- (2) 手で直接引き抜く場合  
下図の保持部をつかみ、できるだけ垂直に引き抜いて下さい。

### 5-3 外部導体はみ出し量


外部導体はみ出し量規定  
: 外部導体トータル本数の10%以下  
(外部導体バレルの外にはみ出し量)

### 5-4 熱収縮チューブについて

熱収縮チューブで外部導体を覆う場合は、導通不良の原因になりますので、熱によりハウジングを溶融させないよう注意してください。

### 6. 本コネクタは'Pb-free'である

GENERAL TOLERANCE		
6 MAX.	$\pm 0.2$	
6 OVER MAX. 30	$\pm 0.3$	
30 OVER MAX. 120	$\pm 0.5$	
ANGLE	$\pm 2^\circ$	

<div></div>						DESIGN' D BY	DATE	<div>I-PEX</div> <div>Interconnect and Packaging Electronics TOKYO, JAPAN</div>			
						CHK' D BY	DATE				
						APP' D BY	DATE				
REV	ECN	BY	DATE	APP	TITLE			General			
					MIF series micro coaxial connector plus vertical (ground contact : gold plating)						
REV. RECORD					CUSTOMER COPY	PROJECTION 	SCALE	UNIT	DWG. No.	SHEET	REV.
SERIES No. 2814							-/-	mm	20278	4/4	19C

**No.06027-2**  
Apr./01/'11

## 材料証明書 MATERIAL CERTIFICATE

当社製品には下記の材料が使われている事を証明致します。

WE HEREBY CERTIFY THAT THE FOLLOWING MATERIALS ARE USED IN OUR PRODUCT.

PRODUCT NAME : MHF series micro coaxial connector Plug & Receptacle

PRODUCT Part No. : 20278-\*\*\*R-08,-13,-32,-18

20351-\*\*\*R-37

20279-001E-01,20314-001E-01

Plug , Non halogen free type

	部品 COMPONENT	材料/MATERIAL			UL94難燃性 UL94 FLAME CLASS	ULファイルNo. UL FILE No.
		材質名 MATERIAL	型名 CAT No.	材料メーカー MANUFACTURE R		
1	Housing	PBT	DURANE X3116	WINTech POLYMER LTD.	V-0	E213445
2	Contact	Phosphor bronze	C5210-H	JX Nippon Mining & Metals Co.,Ltd	-----	-----
				HARADA METAL INDUSTRY Co.,Ltd		
				Mitsubishi Materials Co.,Ltd		
3	Ground Contact	Phosphor bronze	C5191-1/2H	HARADA METAL INDUSTRY Co.,Ltd	-----	-----

※ 添付資料 : ULカード写し / UL Card Copy

株式会社アイペックス  
I-PEX Co.,Ltd.

APPROVAL	CHECK	ORIGINATOR
E.Kawabe	T.Takano	H.Minegishi
Apr./01/'11	Apr./01/'11	Apr./01/'11



Plug, halogen free type

	部品 COMPONENT	材料／MATERIAL			UL94難燃性 UL94 FLAME CLASS	ULファイルNo. UL FILE No.
		材質名 MATERIAL	型名 CAT No.	材料メーカ MANUFACTURER		
1	Housing	PBT	DURANEX 310NF	WINTech POLYMER LTD.	V-0	E213445
2	Contact	Phosphor bronze	C5210-H	JX Nippon Mining & Metals Co.,Ltd	-----	-----
				HARADA METAL INDUSTRY Co.,Ltd		
				Mitsubishi Materials Co.,Ltd		
3	Ground Contact	Phosphor bronze	C5191-1/2H	HARADA METAL INDUSTRY Co.,Ltd	-----	-----

※ 添付資料 : ULカード写し / UL Card Copy

Receptacle

	部品 COMPONENT	材料／MATERIAL			UL94難燃性 UL94 FLAME CLASS	ULファイルNo. UL FILE No.
		材質名 MATERIAL	型名 CAT No.	材料メーカ MANUFACTURER		
1	Housing	LCP	VECTRA E130i	Polyplastics Co.,Ltd	V-0	E106764
2	Contact	Brass	C2680R-0	JX Nippon Mining & Metals Co.,Ltd	-----	-----
3	Ground Contact	Phosphor bronze	C5191-1/2H	HARADA METAL INDUSTRY Co.,Ltd	-----	-----

Component - Plastics

E213445

**WINTech POLYMER LTD**

18-1 KONAN 2-CHOME, MINATO-KU, TOKYO 108-8280 JP

**3116(e)**

Polybutylene Terephthalate (PBT), "Duranex", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.75	V-0	4	0	130	-	130
	1.5	V-0	3	0	130	120	130
NC, BK	3.0	5VA	2	0	130	120	130

Comparative Tracking Index (CTI): **2**Dimensional Stability (%): **0.0**High-Voltage Arc Tracking Rate  
(HVTR): **3**High Volt, Low Current Arc Resis (D495): **6**Dielectric Strength (kV/mm): **23**Volume Resistivity ( $10^x$  ohm-cm): **16**

(e) - Virgin and regrind up to 50 by weight incl. have the same basic material characteristics above a minimum thickness of 0.75 mm

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents.  
ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 2000-11-15

Last Revised: 2003-10-24

Underwriters Laboratories Inc®

**IEC and ISO Test Methods**

Test Name	Test Method	Units	Thickness	Value
			Tested (mm)	
Flammability	IEC 60695-11-10, IEC 60695-11-20	Class (color)	0.75	V-0 (ALL)
			1.5	V-0 (ALL)
			3.0	5VA (NC, BK)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

Underwriters Laboratories Inc®

Component - Plastics

E213445

**WINTech POLYMER LTD**

18-1 KONAN 2-CHOME, MINATO-KU, TOKYO 108-8280 JP

**XFR 4840 GF10, 310NF**

Polybutylene Terephthalate (PBT), "Duranex", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.75	V-0	1	0	130	125	125
	1.5	V-0	1	0	130	125	125
	3.0	V-0	1	0	130	125	125

Comparative Tracking Index (CTI): 1

Dimensional Stability (%): -

High-Voltage Arc Tracking Rate (HVTR): 0

High Volt, Low Current Arc Resis (D495): 5

Dielectric Strength (kV/mm): 24

Volume Resistivity (10<sup>x</sup> ohm-cm): 14

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 2006-07-24

Last Revised: 2010-10-04

Underwriters Laboratories Inc®

**IEC and ISO Test Methods**

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.75	V-0 (ALL)
			1.5	V-0 (ALL)
			3.0	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

Underwriters Laboratories Inc®

Component - Plastics

E106764

**POLYPLASTICS CO LTD**

VECTRA DIV, 18-1 KONAN 2-CHOME, MINATO-KU, TOKYO 108-8280 JP

**E130i(d)(e)(f1)**

Liquid Crystal Polymer (LCP), thermotropic aromatic, "Vectra", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC, BK	0.75	V-0	2	4	240	220	240
	1.5	V-0	1	4	240	220	240
	3.0	V-0	0	4	240	220	240

Comparative Tracking Index (CTI): 4

Dimensional Stability (%): 0

High-Voltage Arc Tracking Rate  
(HVT): 0

High Volt, Low Current Arc Resis (D495): 5

Dielectric Strength (kV/mm): 39

Volume Resistivity (10<sup>8</sup> ohm-cm): 16

(d) - Virgin and regrind up to 50% by weight incl., have the same basic material characteristics in NC and BK with a minimum thickness of 0.80mm.

(e) - Regrind from 26-50% by weight inclusive has an Impact RTI of 180°C at thicknesses greater than 1.5mm.

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents.  
ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 1992-08-19

Last Revised: 2008-07-03

Underwriters Laboratories Inc®

**IEC and ISO Test Methods**

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.75	V-0 (NC, BK)
			1.5	V-0 (NC, BK)
			3.0	V-0 (NC, BK)
Glow-Wire Flammability (GWI)	IEC 60695-2-12	C	-	-
Glow-Wire Ignition (GWI)	IEC 60695-2-13	C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

Underwriters Laboratories Inc®

# MATERIAL SAFETY DATA SHEET (MSDS)

Issued: Dec 20, 2007

Revised: Dec 20, 2007

File No. 2302

## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

CHEMICAL PRODUCT NAME : DURANEX XFR4840  
NAME OF COMPANY : WinTech Polymer Ltd.  
SECTION IN CHARGE : Quality Assurance Dept.  
ADDRESS : 2-18-1 Konan, Minato-ku, Tokyo, 108-8280 Japan  
TELEPHONE NUMBER : 03-6711-8605  
FACSIMILE NUMBER : 03-6711-8616

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE/PREPARATION : Preparation

COMMON CHEMICAL NAME : Polybutyleneterephthalate

SYNONYMS : Polybutyleneterephthalate(PBT)

INGREDIENTS AND COMPOSITION : PBT  $\geq$  80%, Phosphorus Flame retardant and others  $\leq$  20%

CHEMICAL FORMULA :  $\{ \text{C}_6\text{H}_4\text{O}_2(\text{C}_4\text{H}_8\text{O}_2)_n$

SERIAL No IN OFFICIAL GAZETTE : 7-1039 (base resin)  
(Law Concerning Examination and Regulation of Manufacture, etc., of Chemical Substances)

CAS No : 24968-12-5 (base resin)

## 3. HAZARDS IDENTIFICATION

PHYSICAL AND CHEMICAL HAZARDS : Not applicable

HUMAN HEALTH EFFECTS : Not applicable

ENVIRONMENTAL EFFECTS : Not applicable

PHYSICAL AND CHEMICAL HAZARDS : It is inflammable substance and combustible if an igniting source is existent. Neither dangerous reaction, fire nor explosion can be caused under normal conditions.

THE CLASSIFICATION : Not applicable

## 4. FIRST-AID MEASURES

INGESTION : Help to vomit as much as possible. If sick feeling continues, ask a physician for advice.

INHALATION : When a gas generated from the molten polymer, especially fume generated during combustion or heat, has been inhaled, remove fresh air without delay and wait until the victim is recovered. If sick feeling continues, ask a physician for advice.

SKIN CONTACT : Cool the contacted skin with clean water without delay, if a contact with the polymer in a molten form. Do not force to remove the solid resin on the skin. If any burns are observed on the skin, ask a physician for advice.

EYE CONTACT : Cool and rinse the eye with clean water for at least 15 minutes when the eyes had contact with molten polymer. In case of wearing contact lenses,remove the lenses as soon as possible,and ask a physician for advice. When the eye had contact with the polymer in an ordinary solid form,rinse the eye with clean water without delay. If the discomfort persists,ask a physician for advice.

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#### 5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA : Water,form fire-extinguishing agent,powder fire-extinguishing agent,and carbon dioxide gas.

SPECIFIC METHODS : Extinguish the fire with water. A method of extinguishing an ordinary fire may be applied. Do not apply water directly to processing machines.

SPECIFIC HAZARDS : Incomplete combustion leads to generation of toxic gases such as carbon monoxide or tetrahydrofuran,in addition to carbonic acid gas and water.

SPECIAL EQUIPMENT FOR THE PROTECTION OF FIREFIGHTERS : In case the fire gained force,use a gas mask or other protective equipment.

---

#### 6. ACCIDENTAL LEAKAGE MEASURES

PERSONAL PRECAUTIONS : When pellets were spilled on the road or floor,wipe them off with a besom or cleaner not to cause slipping.

ENVIRONMENTAL PRECAUTION : Handle the spillage in accordance with provisions given in the "Resin pellet spillage preventive manual",in order to prevent intakes by marine animals and birds.

---

#### 7. HANDLING AND STORAGE

HANDLING : This resin in a pellet form will neither ignite nor explode at room temperatures.

HANDLING 2 : For molding work,effective means for local exhaust are required to discharge gases generated by melt processing.

HANDLING 3 : Avoid inhaling of gases generated in moulding work. Do not directly touch resin of high temperature.

HANDLING 4 : Avoid retaining hot resin in the processing machines for many hours.

HANDLING 5 : This pellets spilled on the floor are likely to cause slipping. Remove such spillage at any times.

STORAGE : Keep the substance away from any fire or heat sources for the sake of safe storage.

RECOMMENDED PACKAGING MATERIALS : No information.

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#### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

CONTROL CONCENTRATION : None at present

PERMISSIBLE CONCENTRATION : OSHA PEL/1985  
Max. permissible concentration of inactive powder 15mg/m<sup>3</sup>  
- ditto - (Aspiration ) 5 mg/m<sup>3</sup>  
ACGIH TLV/1992 1993  
Exposure limit of the powder TWA 10 mg/m<sup>3</sup>

ENGINEERING MEASURE : When handling dust: Use totally enclosed containers resisting dust explosion.  
When heat melted in molding: Effective local ventilation must be provided.



PERSONAL PROTECTIVE EQUIPMENT	:	
RESPIRATORY PROTECTION	:	Wear a dust-proof mask.
EYE PROTECTION	:	Wear protective glasses or goggles.
HAND PROTECTION	:	Wear heat-resisting gloves against burns, when handling molten polymer.
SKIN & BODY PROTECTION	:	Wear long sleeve clothes against burns, when handling molten polymer.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE etc.	:	Pellet
BOILING POINT	:	Not applicable
VAPOUR PRESSURE	:	Not applicable
VOLATILITY	:	Not applicable
SUBLIMATION	:	None
MELTING POINT	:	228°C
DENSITY	:	1.32g/cm <sup>3</sup>
SOLUBILITY	:	Insoluble in water
FLASH POINT	:	300°C or higher
IGNITION POINT	:	300°C or higher
EXPLOSION PROPERTY	:	Not applicable
INFLAMMABILITY	:	None
REACTIVITY WITH WATER	:	None
OXIDIZABILITY	:	None
SELF-REACTIVITY	:	None
DUST EXPLOSIVENESS	:	Upper explosion limit : Not applicable. Lower explosion limit : 35g/m <sup>3</sup>

## 10. STABILITY AND REACTIVITY

STABILITY AND REACTIVITY	:	Stable for normal storage or handling.
--------------------------	---	--

## 11. TOXICOLOGICAL INFORMATION

SKIN CORROSIVE PROPERTIES	:	No finding.
SENSITIZING & IRRITANT EFFECTS	:	Gas generated in drying or melting is irritating eyes and skins.
ACUTE TOXICITY(INCLUDING LD50)	:	No finding.
SUBACUTE TOXICITY	:	No finding.
CHRONIC TOXICITY	:	No finding.

CARCINOGENECITY : No finding.

MUTAGENECITY(Mi : No finding.  
cro  
organisms,chromoso  
mal aberration)

REPRODUCTIVE : No finding.  
TOXICITY

TERATOGENICITY : No finding.

OTHERS(Including : No finding in this report means that there will be no hazard in  
generation of general,but no proving data available at the time of reporting.  
hazardous gases by  
reaction with  
water,for ezample)

OTHER CAUTIONS : With regard to dust,the maximum permissible concentration and limits  
are fixed by OSHA and ACGIH.

---

## 12. ECOLOGICAL INFORMATION

BIODEGRADABILITY : No finding.

BIOACCUMULATION : No finding.

FISH TOXICITY : No finding.

---

## 13. DISPOSAL CONSIDERATION

WASTE FROM : This is designated as waste plastics among industrial wastes by the  
RESIDUES Wastes Disposal Law. Disposal waste pellets through licensed wastes  
handlers or local autonomous bodies if they are handling wastes  
disposal.

WASTE FROM : When disposed by incineration,use the well controlled incinerators in  
RESIDUES 2 accordance with the Wastes Disposal Law,Air Pollution Control Law and  
Water Pollution Prevention Law.

---

## 14. TRANSPORT CONSIDERATION

UN : Not applicable  
CLASSIFICATION  
NUMBER

OTHER CAUSIONS : Handle with care so as not to give damages to containers or not to be  
subjected to wetting.

OTHER CAUSIONS : Secure the containers firmly so as not to cause collapsing.  
2

---

## 15. REGULATORY INFORMATION

WASTE DISPOSAL : Waste plastics among industrial wastes.  
LAW

---

## 16. OTHER INFORMATION

HANDLING OF THE : This MSDS is the English version translated from the Japanese MSDS  
DETAILS GIVEN which is prepared for domestic use.  
ABOVE Details given above are based on references, information and data  
available at this moment, but no warranty can be made on exactness of  
these details. They are also prepared on the assumption that the  
product will be handled in a normal way. For special handling, adequate  
safety and environmental measures should be taken in respect to its  
applications. Our products are not specifically intended for implants for  
medical and dental applications, and therefore they are not  
recommended for such applications.  
"No finding" in this report means that there will be no hazard in general,  
but no proving data is available at the time of reporting.

WHERE TO CALL : WinTech Polymer Ltd. Quality Assurance Dept.  
FOR FURTHER Tel. No 03-6711-8605  
INFORMATION



深圳市沃尔核材股份有限公司  
SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.

## 材质证明书

我司 RSFR-H 无卤环保热缩套管 是一种阻燃型的热收缩套管，组成材料为聚烯烃加适量阻燃剂和助剂。产品中铅（Pb）、镉（Cd）、汞（Hg）、六价铬（Cr<sup>6+</sup>）、多溴联苯（PBBs）、多溴联苯醚（PBDEs）等环境物质含量符合欧盟 RoHS 2002/95/EC 及日本 Sony-SS-00259 环保要求。其主要成分如下：

原料名称			使用目的	含量	供应商	CAS.NO.
中文	英文	分子式				
聚烯烃	Polyolefin	(CH <sub>2</sub> CH <sub>2</sub> ) <sub>n</sub>	主剂	50%	北京有机	9002-88-4
氢氧化镁	Magnesium Hydroxide	Mg(OH) <sub>2</sub>	阻燃剂	35%	锦昊辉	1309-42-8
磷系阻燃剂	Phosphorus	(NH <sub>4</sub> PO <sub>3</sub> ) <sub>n</sub>	阻燃剂	10%	上海海以	7723-14-0
色母粒	Pigment	色母+填充剂	着色剂	5%	华万彩	——
油墨	Printing Ink	——	印字	——	上海捷信	——

深圳市沃尔核材股份有限公司  
2012年1月15日

品质中心

公司地址：深圳市坪山新区兰景北路沃尔工业园 邮编：518118  
电话：0755-28299167 传真：0755-28299164  
网址：http://www.woer.com E-mail: qc@woer.com





**Underwriters  
Laboratories Inc.®**

455 East Trimble Rd  
San Jose, CA 95131-1230 USA  
www.ul.com  
tel: 1 408 754 6500  
fax: 1 408 689 6500

06SC04380  
E203950 - YDPU2/YDPU8

January 11, 2006

**SHENZHEN WOER HEAT SHRINKABLE MATERIAL CO LTD.**  
Shenzhen, CHINA

Attention: Mr. Yorway Shore  
Subject: Flexible Heat Shrinkable Polyolefin tubing with liner - Cat. No. SBRS, using modified grade liner grade, rated 105C, 600V, All Colors Except Clear, VW-1 Flame, 1.0 to 42.0 mm recovered ID.

Dear Mr. Shore:

**NOTICE OF AUTHORIZATION TO APPLY THE UL RECOGNITION MARK**

Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

UL's investigation of your product has been completed under project number 06SC04380 and the product was determined to comply with the applicable requirements.

This fax temporarily supplements the UL Follow-Up Services Inspection Procedure and serves as authorization to apply the UL Recognized Marking only at the factories under UL's Follow-Up Service Program to the products which are constructed as described below:

Identical to Cat. No. SBRS, as described above and in the attached Description pages which were submitted for this investigation. The UL Records covering the initial testing of this product can be found in the UL Follow-Up Services Inspection Procedure, File E203950, Volume 2, Section 3.

This authorization is effective from the date of this Notice and only for products at the indicated manufacturing locations. Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent to the indicated manufacturing locations in the near future. Please note that Follow-Up Services Procedures are sent to the manufacturers only unless the Applicant specifically requests this document.

Products that bear the UL Recognition Mark shall be identical to those that were evaluated by UL and found to comply with UL's requirements. If changes in construction are discovered, appropriate action will be taken for products not in conformance with UL's requirements and continued use of the UL Recognition Mark may be withdrawn.

Very truly yours,

Reviewed by:

CELESTE CAPULONG (x 56567)  
Project Handler  
Conformity Assessment Services

JANEANN MATULICH (x 56654)  
Lead Engineering Associate  
Conformity Assessment Services

An independent organization working for a safer world with integrity, precision and knowledge.



# 物质安全资料表

## MATERIAL SAFETY DATA SHEET

### 一、物品与厂商资料 Article and supplier information:

物品名称: 环保热缩套管 H
Article: Heat shrinkable tube (WOER)
规格型号:
Spec: black plastics w/white printing
供货商名称: 昆山中石信电子有限公司
Supplier: KUNSHAN JONESES ELECTRONICS CO. LTD

### 二、成分资料 Composition and information on ingredients:(G 管) 混合物 Admixture

化学性质: 环境物质(CHEMICAL PROPERTIES: ENVIRONMENT MATERIALS)			
英文名称 (English name)	中文名 Chinese name	含量 Content	测试方法 Test method
Cadmium	镉 (Cd)	≤ 100ppm	EN1122: 2001
Lead	铅 (Pb)	≤ 1000ppm	EPA3050B
Chromium (VI)	铬 (Cr) VI	≤ 1000ppm	EPA7196A、EPA3060A
Mercury	汞 (Hg)	≤ 1000ppm	EPA3052
Polybrominated Biphenyls (PBBS)	多溴联苯	≤ 1000ppm	EPA3540C EPA3550C
Polybrominated Diphenylethers (PBDES) except DecaBDE	多溴联苯醚(不含十溴联苯醚)	≤ 1000ppm	EPA3540C EPA3550C

### 三、辨别资料 DISCERN INFORMATION:

最重要的 危害项目 KEY HAZARD ITEM	健康危害效应: 点燃后在短时间内会熄灭, 有少量烟雾产生, 对人体呼吸道产生轻微伤害。 Health hazard note: Be fired for a moment and will be flameout, it will produce a little smoke, the smoke will hazard breath a little.
	环境影响: 危害空气。Environment hazard note: If be fired and pollute the air.
	物理性及化学性危害: 常态是管状, 在 90-125℃ 预热收缩。Physics and chemistry characteristic: it normal is pipe and will shrink at 90-125℃, that perhaps is harmful.
	特殊危害: 如果火烤、烟熏, 烟雾会冲击眼睛、呼吸系统, 对人体产生伤害。 Specific hazard: if be fired or sootiness, it will produce smoke and smoke hurt eyes breath.
主要症状: 眼睛流泪, 喷嚏, 咳嗽, 在呼吸新鲜空气会减轻相应症状。 Main symptom: lachrymation, sneeze, cough. It will be good after breathing fresh air.	
物品燃烧危险: 必须在点燃时会短时间燃烧。 Fireproofing characteristic: It can flame for a moment after leaving fire.	

### 四、急救措施 FIRST—AID MEASURES:

不同暴露途径之急救方法: First-aid measures:
吸入: 在正常操作下没有吸入的危险。Normal it is no harmful for breath. If be fired, and breath the smoke
皮肤接触: 正常接触时对皮肤无损伤。由于此管易划伤, 建议操作时戴手套。
Skin touch: Normal it is no harmful for skin



眼睛接触: 无影响 Normal it is no harmful for eyes. If be fired , the smoke hurt eyes a little, leave the smoke and eyes will come to comfort.
食入: 不能食用 Can't be eat.
最重要及危害效应: 吸入燃烧烟雾, 冲击呼吸系统。Key symptom: Be fired ,the smoke choke the breath.
对急救人员之防护: 配戴呼吸防护装置。First aid defend: Get on gas mask
对医师之提示: 对呼吸系统严重症者, 应不断吸入新鲜空气来减轻症状。
Doctor suggest: If breath a lot of smoke ,must breath more fresh air , it can help you to reduce the symptom.

## 五、FIRE-FIGHTING MEASURES:

适用灭火剂: 不能长时间燃烧, 使用粉末灭火器。Fire-fighting material medical: Dust farina powder
灭火时可能遭遇之特殊危害: 燃烧可产生少量烟雾, 冲击人体呼吸系统。
During fire-fighting, special hazard: Be fired ,produce a little smoke , and it can choke the breath
特殊灭火程序: 无。Special fire-fighting program: No special program
消防人员之特殊防护设备: 正常消防设备。Fire-fighter special dependence: Normal fire-fighting device

## 六、GIVEAWAY TRANSACT METHOD:

个人应注意事项: 无 Person notice: No
环境注意事项: 无 Environment notice: No
清理方法: 无 Cleaning method: No special method

## 七、安全处理与储存方法 SAFETY AND DEPOSIT METHOD

处置: 常温下用纸箱包装, 不要放置在太阳光下直射。
Treatment: At normal temperature ,paper box package, no sun straight shine
储存: 常温下用纸箱包装好放置在凉荫处。
Deposit: At normal temperature paper box package, no sun straight shine

## 八、物理及化学性质 PHYSICAL AND CHEMICAL PROPERTIES:

物质状态: 软质套管。State: Soft pipe	形状: 套管状 Shape: Pipe
颜色: 黑色及彩色。Color: Manifold color	气味: 无味 Smell: No
分解温度: 125℃预热收缩, 不会分解。 Decompose temperature:125℃ shrink, but don' t decompose	闪点: 阻燃 Flash point: Fire-resistant
自然温度: 常温 Normal temperature	爆炸界限: 无 Explode rate: No

## 九、稳定性及反应性 STABILITY AND REACYIVITY:

稳定性: 不能分解。Stability: No decompose
特殊状况下可能之危害反应: 有火的话, 此种产品会短时间燃烧, 产生烟雾。Special condition, perhaps hazard: If has fire, the production can be fired for a moment and produce a little smoke
应避免之状况: 高温放置会收缩。
Please avoid the condition: At heat temperature condition the production will shrink
应避免之物质: 火种 Please avoid the condition: Fire
危害分解物: 烟雾。Hazard decompose material: Smoke

## 十、毒性资料 TOXICOLOGICAL INFORMATION:

急毒性: 无 Rapid virulence: No
局部效应: 无 Part effect: No
致敏感性: 无 Cause hypersusceptibility : No
慢毒性或长期毒性: 无 Slowly or long-term virulence: No
特殊效应: 无 Special effect: No



十一、生态效应 ECOLOGICAL INFORMATION:

可能之环境影响/环境流: 该产品不会在自然界分解, 对动植物及水生物不会产生危害。

Perhaps environment effect: The production can't decompose at nature condition, so it can't hazard the animal and plant.

十二、处置注意事项 DISPOSAL CONSIDERATIONS:

废弃处置方法: 这些物品将统一收集给废品收购站, 作相应环保处理。

Trash disposal: Collect and treat for the environment.

十三、运送资料 TRANSPORTATION INFORMATION:

国际运送规定: 无 World wild transportation rule: No

联合国编号: 无 U.N. code: No

国内运送规定: 无 Transportation in china rule: No

特殊运送方法及注意事项: 避免挤压变形, 利器损伤。 Special transportation method and notice: Avoid extrusion distortion, edge tool hurt

十四、法规资料 REGULATORY INFORMATION:

适用法规: UL224 Comply rule or law: UL224

十五、其它资料 OTHER INFORMATION:

参考文献: SGS 检测报告 Reference : SGS Test Report

(以上内容如有歧义以中文为准 If the Chinese and English content have some different things, the Chinese content is right)

昆山中石信电子有限公司  
套管品质部  
2009 年 09 月 27 日

# APPROVAL SHEET


深圳市环协科技有限公司

ShenZhenHuanXieTechnologyco.ltd

Customers:

Date 2016.03.09

Customer P/N	
Huan-Xie P/N	B020-SMA-C-003
Production Description	<b>Cable Assembly</b>
Version	B

<b>Approved By</b>	<b>Approved By Huan-</b>
	

<b>APPROVAL</b>	<b>CHECK</b>	<b>ORGANIZER</b>
肖清岭	付云龙	琚芬

深圳市环协科技有限公司

ShenZhenHuanXieTechnologyco.ltd

地址:深圳市宝安区松岗镇沙浦围工业大道62号

TELL: 0755-33508731

FAX: 0755-33508732

# 深圳市环协科技有限公司

ShenZhenHuanXieTechnologyco. l td

## Table of Contents

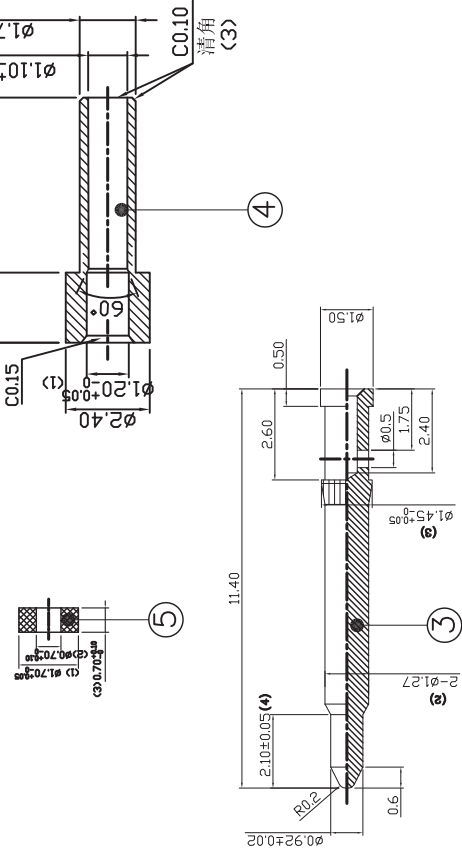
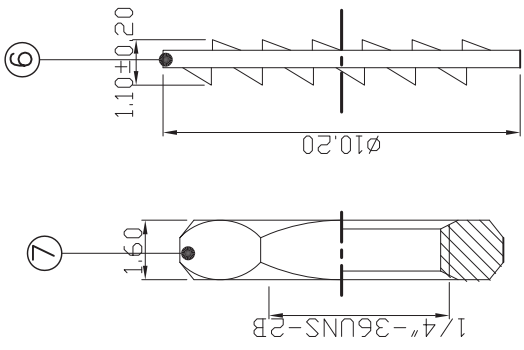
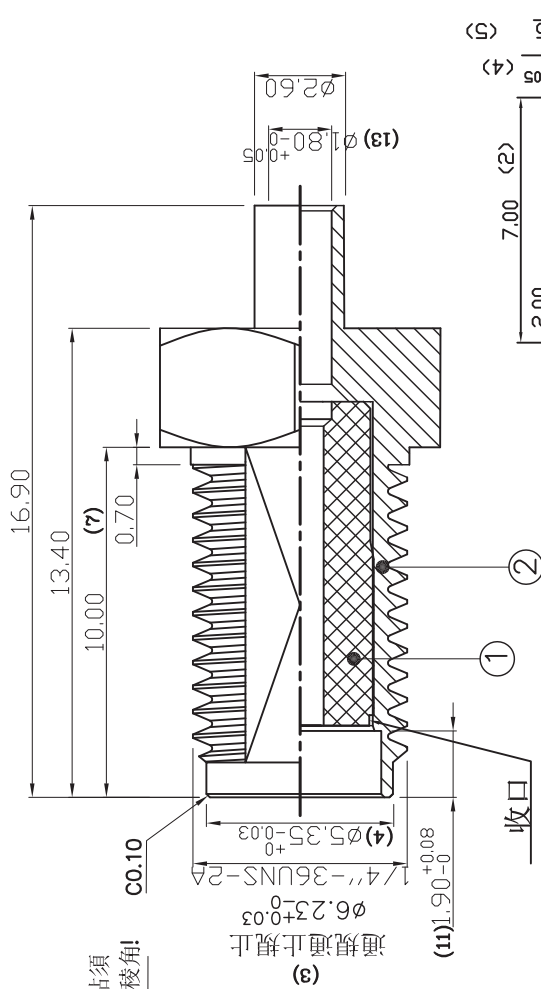
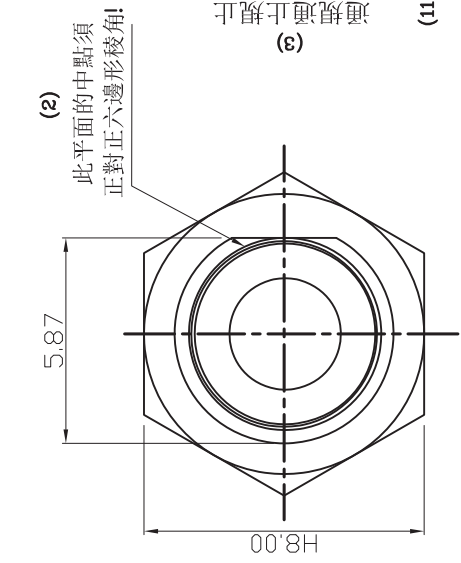
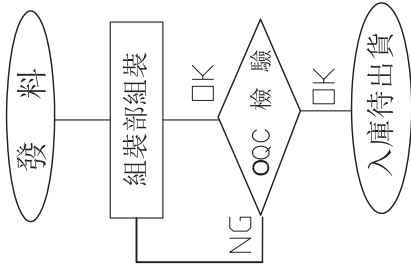
1.封面	1
2.目录	2
3.图纸	3
5.材质证明	4-5
6.MSDS 报告	6-37
7.ROHS报告	38-52

## Modification History:

---

REV.	Date	Content
0	2015.07.25	

一.生產流程圖:



1. Electrical Characteristics
- 1.1 Impedance: 50 Ohm
  - 1.2 Working Frequency: DC - 6 GHz
  - 1.3 S.W.R. : ≤ 1.5
  - 1.4 Working Voltage: 335V / max
  - 1.5 Insulation Resistance: 1000 Mohm
  - 1.6 Contact Resistance: Center Contact: 5 mohm
  - 1.7 Outer Contact: ≤ 2.5 mohm
2. Environmental
- 2.1 Working Temperature Range: - 55 ° C ~ +125° C
  - 2.2 Salt spray test: 48H



深圳市环协科技有限公司  
ShenZhenHuanXieTechnologyco.ltd

<div>Tolerance 未标注公差: .X ±0.2 .XX ±0.10 .XXX ±0.05 未标注角度公差: ±1°</div>	C/U No. 客戶編號	B020	Part Name, 品名/規格	RP SMA JACK FOR RGL13
	Material, 材質		C/U Part No. 客戶料號	
	Finish, 處理		PartNo. 料號	B020-SMA-C-003
	Scale, 比例	1:1	Draw . 繪圖	Check, 校對 App. 核准
	REV, 版本/次	A/0	据 芬	
Unit, 單位: mm		15.11.24		

Rev.	Date.	變更單號 ECN No.	變更者	Description, 內容
1				
2				
3				
4				



# 测试报告

公司名称：嘉善振宏氟塑有限公司

产品名称：PTFE棒

检验日期：2015-1-21

序号	项目	测试值	单位	试验方法	备注
1	拉伸强度	16.6~17.5	MPa	ASTM D1710	
2	伸长率	157~179	%	ASTM D1710	
3	比重	2.12~2.26	—	ASTM D792	
4	硬度	50~60	杜罗硬度计	※ASTM D2240	
5	弯曲强度	20.3~20.9	MPa	※ASTM D790	
6	弯曲模量	600~800	MPa	※ASTM D790	
7	压缩强度	11.2~13.6	MPa	※ASTM D695	
8	绝缘强度	18.2~20.8	KV/mm	※ASTM C149	
9	介电常数	1.8~2.2	—	※ASTM D150	
10	介质损耗	<0.0002	(60HZ)	※ASTM D150	
		<0.0002	(10E6HZ)		
11	表面电阻	>10E16	Ω	※ASTM D257	
12	体积电阻	>10E18	Ω cm	※ASTM D257	
13	熔点	327±10	℃	ASTM D792	
14	耐热温度	255±5	℃	※—	
15	导热系数	1.8~2.1	10E6W/(M℃)	※ASTM C177	
16	动摩擦系数	0.1	—	0.7MPa/minSTEEL	

检验人员：沈佳冬





# 江门市锋乐金属制品厂

## 试验报告表

客户:	环协			生产日期: 2014. 11. 03	
试材名称	铜合金 (Copper Alloys)	铜材编号	普通环保铜B C3605	试材规格	H8. 0
全谱直读光谱仪 (SPECTOMAXX)					
元素名称	标准含量 (%)	试样含量 (%)	元素名称	标准含量 (%)	试样含量 (%)
铜 (Cu)	55-57	55. 5	铁 (Fe)	≤0. 50	0. 450
铅 (Pb)	≤4. 0	260	锌 (Zn)	Rem	Rem
锡 (Sn)	---	---	镉 (Cd)	<0. 0100	0. 0055
其他 (Others)	Mn+Si+Mi<0. 3		铋 (Bi)		---
生产批号:					
机械试验 (Mechanical Testing)					
物理性质	拉力 (TechnicalStrength)	延伸率	硬度		
标准要求	Kg/mm <sup>2</sup>	%	HV110-160		
实际数值	Kg/mm <sup>2</sup>	%	HV		
备注					
分析员	关婵	主管	李挽驹		





No. CANEC1507824103

Date: 19 May 2015

Page 1 of 5

DONGGUAN FENGLE METAL MATERIAL CO.,LTD

NO.3,DONGSHENG STREET,HUANGCAOLANG COMMUNITY,DALANG TOWN,DONGGUAN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : National standard brass rod

SGS Job No. : CP15-026048 - GZ

Date of Sample Received : 14 May 2015

Testing Period : 14 May 2015 - 19 May 2015

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Almay Gao  
Approved Signatory



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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](mailto:CN.Doccheck@sgs.com)

198 Kezhu Road, Sciencetech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgs.com.cn  
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 f (86-20) 82075113 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



### Test Results :

### Test Part Description :

**Quantity:** SN1 **Barcode:** CAN15-078241.002 **Description:** Brassy metal rod

### Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

### Test Method:

- Test Method : (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.  
 (2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.  
 (3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.  
 (4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis.  
 (5)With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	47
Lead (Pb)	1,000	mg/kg	2	28726▲
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

Test Item(s)	Limit	Unit	MDL	002
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

### Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II.

(2) ♦Spot-test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)

♦Boiling-water-extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

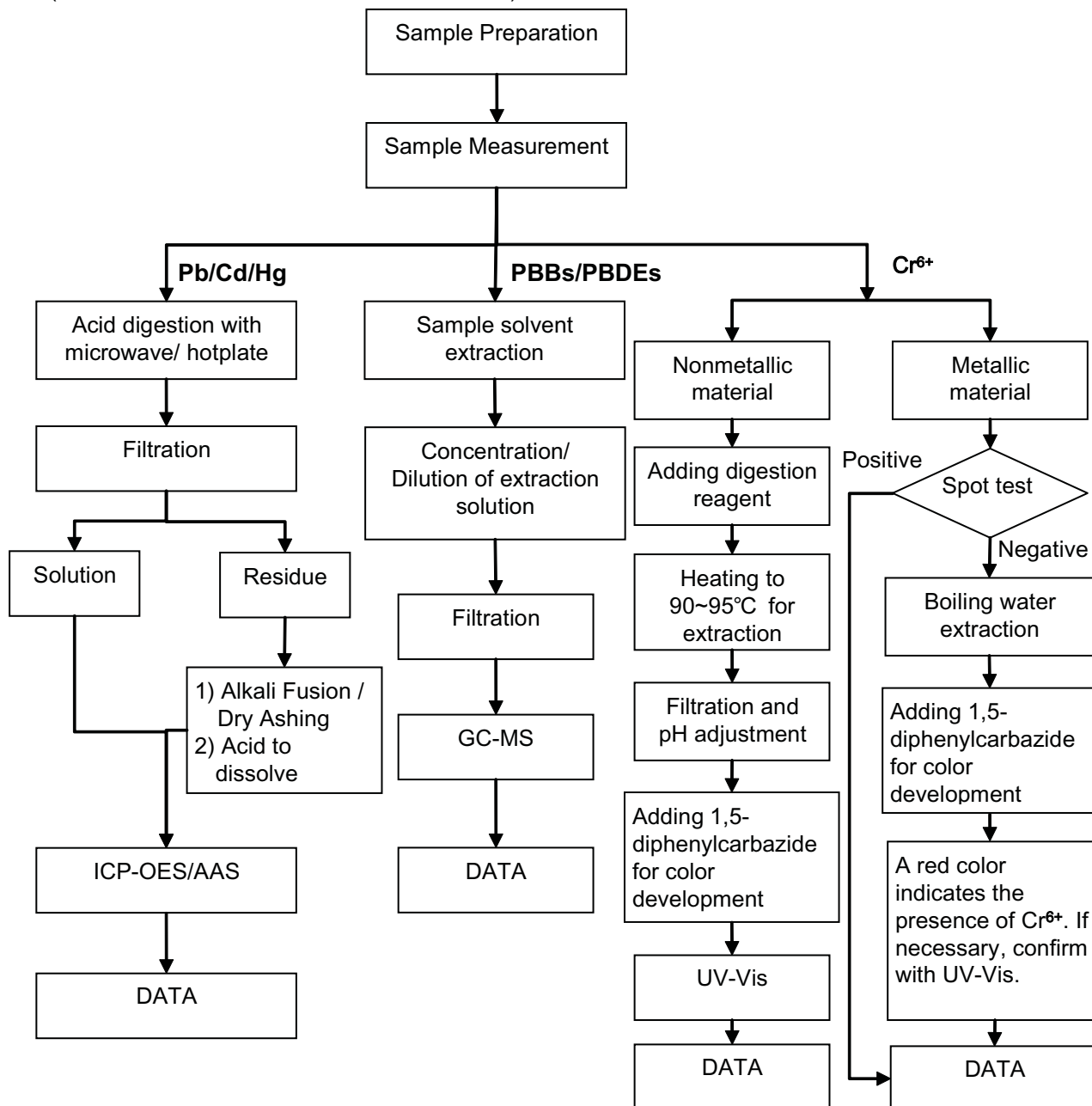
Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

Remark▲: According to the declaration from the client, Lead (Pb) in specimen is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 6(c)]: Copper alloy containing up to 4 % lead by weight.

## ATTACHMENTS

### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



Sample photo:



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*





No. CANEC1503166401

Date: 13 Mar 2015

Page 1 of 5

DONGGUAN CITY YUCHEN INSULATION CO., LTD

XIAN SHA WU FANG INDUSTRIAL ZONE, GAO BU TOWN, DONG GUAN CITY  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PTFE

SGS Job No. : CP15-009749 - GZ

Date of Sample Received : 10 Mar 2015

Testing Period : 10 Mar 2015 - 13 Mar 2015

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Alkene Liang  
Approved Signatory



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## Test Results :

## Test Part Description :

Q1503166401

SN1

CAN15-031664.001

CAN15-031664.001

Whire material

Whire material

## Remarks :

- (1) 1 mg/kg = 0.0001%  
 (2) MDL = Method Detection Limit  
 (3) ND = Not Detected ( < MDL )  
 (4) "-" = Not Regulated

Test Method :

- (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.  
 (2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.  
 (3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.  
 (4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.  
 (5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

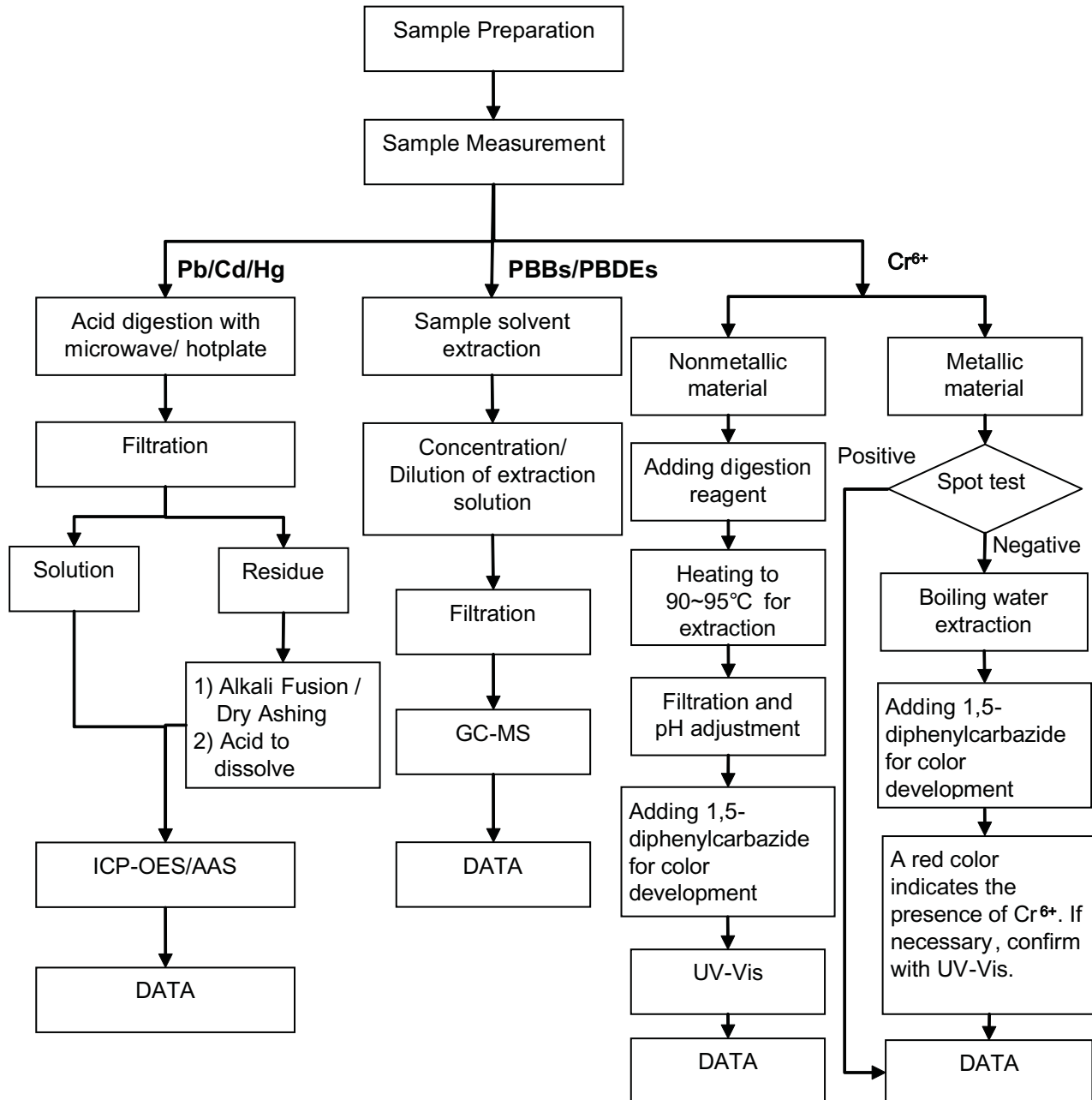
- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II



## ATTACHMENTS

### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre -conditioning method according to below flow chart (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



Sample photo:



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\*\*\* End of Report \*\*\*



No. CANEC1515750601

Date: 15 Sep 2015

Page 1 of 4

YONGYIFA METAL PRODUCTS (SHENZHEN) CO.,LTD.

1A,BUILDING 12,YONG YI FA,CHUANG YE 3 ROAD,JIANGBIAN INDUSTRIAL  
ZONE,SONGGANG,SHENZHEN  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Shell(in Chinese as 壳子)

SGS Job No. : CP15-051930 - SZ

Date of Sample Received : 10 Sep 2015

Testing Period : 10 Sep 2015 - 15 Sep 2015

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

*Yan*

Yan Lee  
Approved Signatory



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Member of the SGS Group (SGS SA)

**Test Results :**

**Test Part Description :**

**Quantity:** SN1      **Order Number:** CAN15-157506.001      **Product:** Silver-gray metal shell

**Remarks :**

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

**Test Method :** (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.  
 (2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.  
 (3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.  
 (4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative

**Notes :**

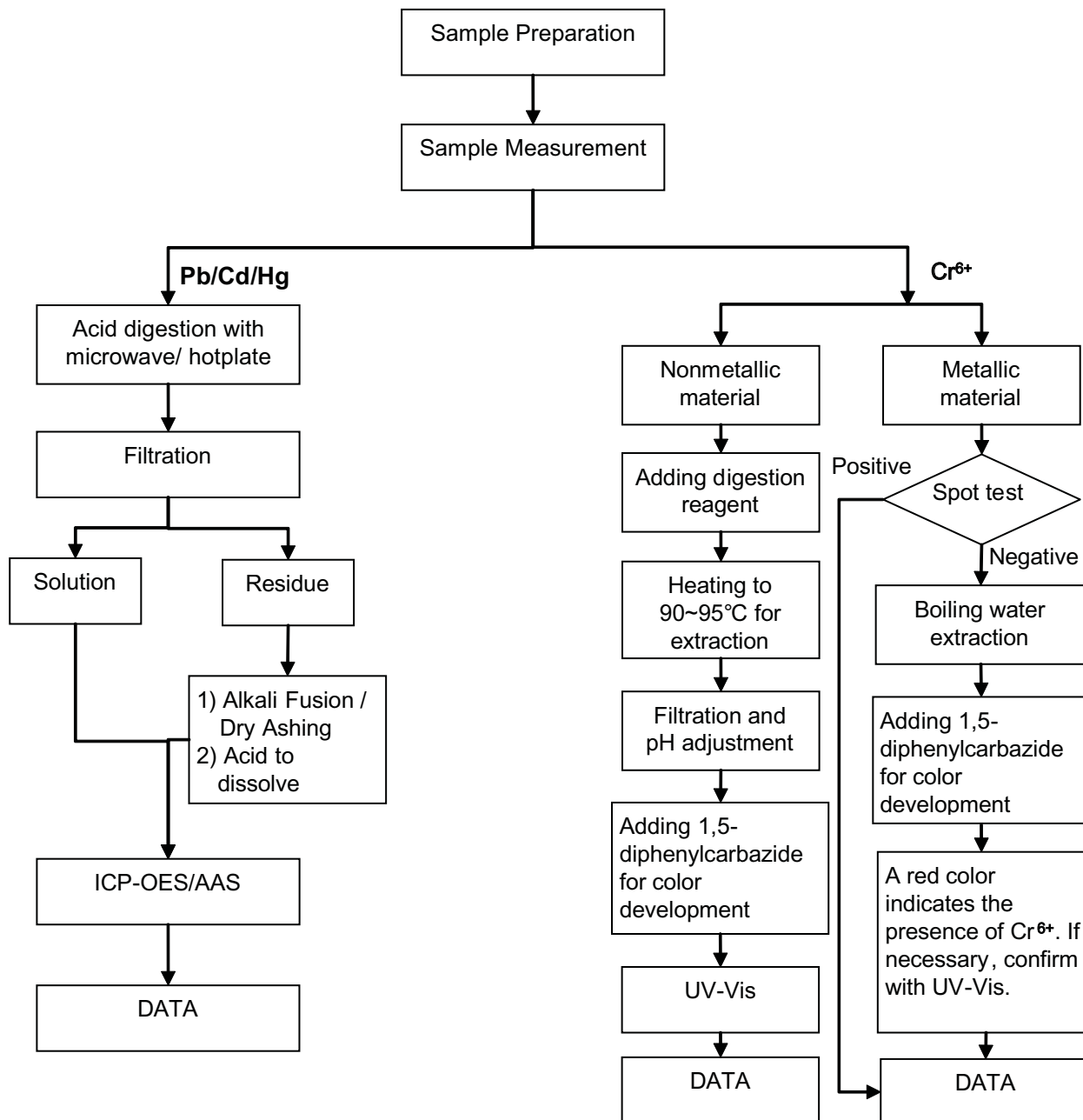
- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2)◇Spot-test:  
 Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;  
 (The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)
- ◇Boiling-water-extraction:  
 Negative = Absence of CrVI coating  
 Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 sample surface area.  
 Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.



## ATTACHMENTS

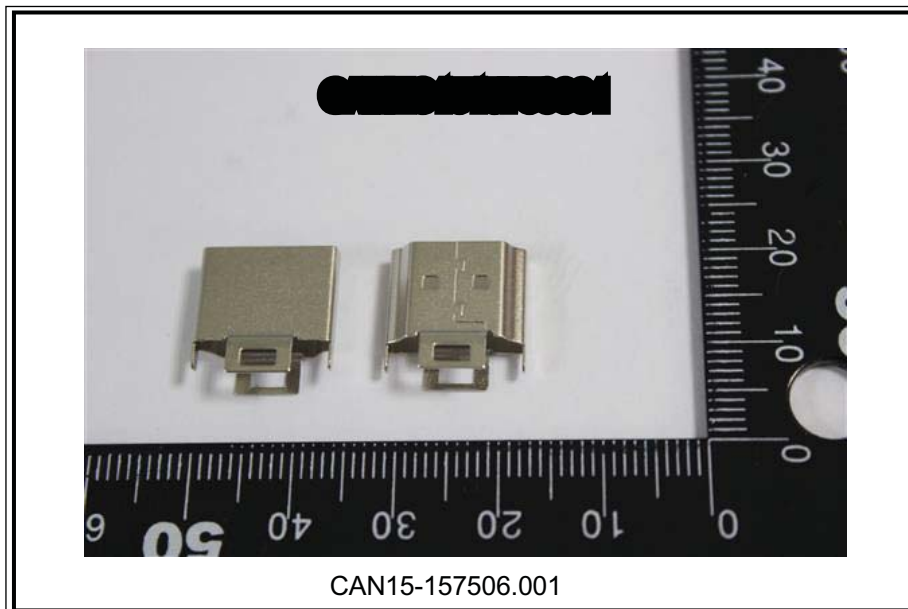
### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao
- 2) Name of the person in charge of testing: Bella Wang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded).





Sample photo:



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\*\*\* End of Report \*\*\*



No. CANML1506009601

Date: 23 Apr 2015

Page 1 of 5

SHEN ZHEN SHI TONG FA DIAN ZI YOU XIAN GONG SI

SHEN ZHEN SHI SONG GANG ZHEN LOU GANG CUN LONG TAN GONG YE QU TONG FA YI LOU ER  
CHE JIAN

The following sample(s) was/were submitted and identified on behalf of the clients as : DIANDUJINCENG

SGS Job No. : GZIN1504014724PC - GZ

Internal Reference No. : 2.1

Manufacturer : TONGFAYILOUERCHEJIAN

Date of Sample Received : 20 Apr 2015

Testing Period : 20 Apr 2015 - 23 Apr 2015

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Merry

Merry Lv  
Approved Signatory



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**Test Results :**

**Test Part Description :**

**Quantity:** SN1 **Order Number:** CAN15-060096.001 **Product:** Golden/silver-grey plating

**Remarks :**

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

**Test Method:**

- Test Method : (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
- (2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
- (3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.
- (4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis.
- (5)With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	44
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

**Notes :**

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II.

(2) ♦Spot-test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)

♦Boiling-water-extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

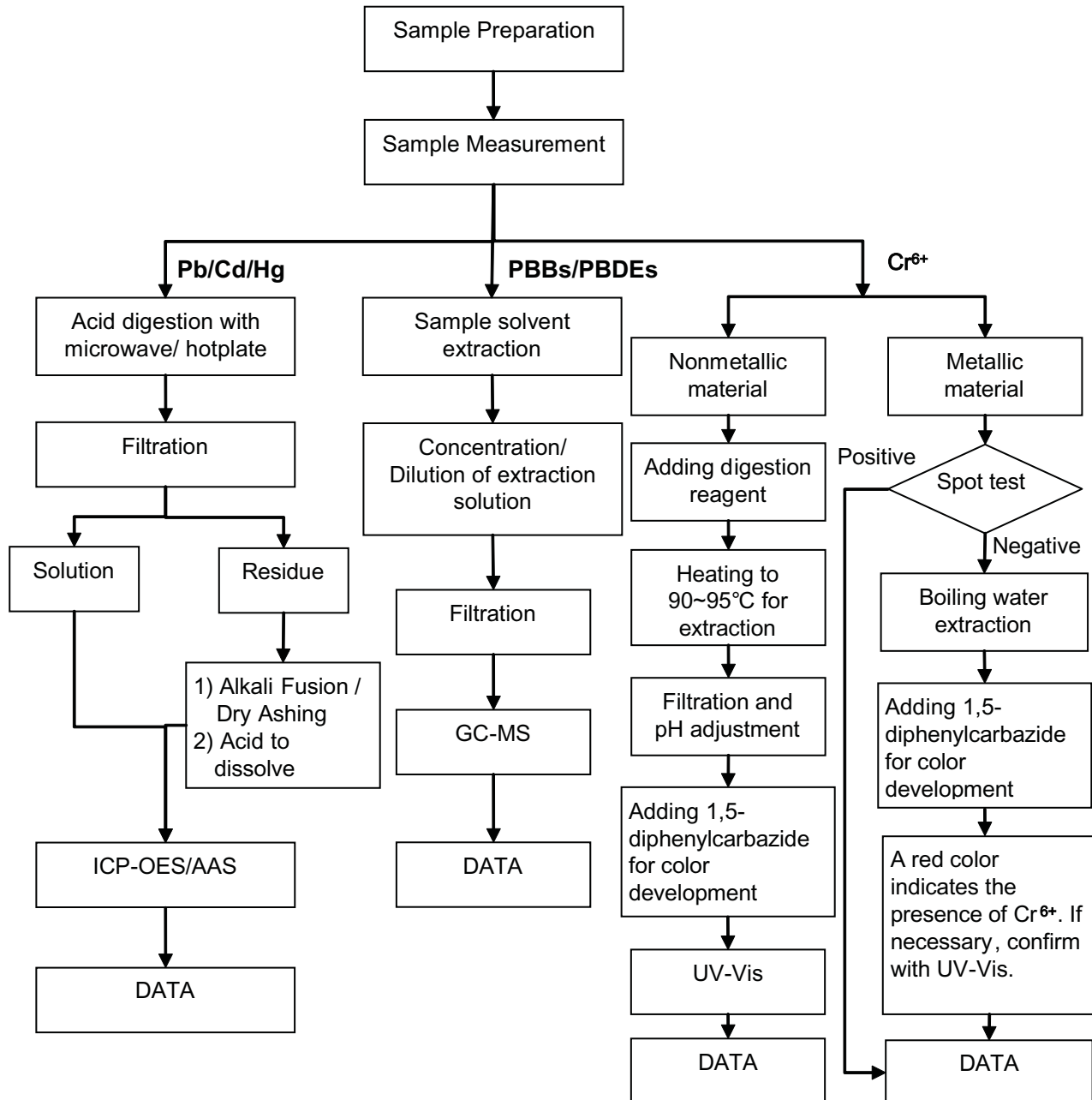
Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.



## ATTACHMENTS

### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre -conditioning method according to below flow chart (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).





Sample photo:



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\*\*\* End of Report \*\*\*

# 物质安全资料数据表(MSDS)

## 一、标识

中文名：**氰化亚金钾**

分子式： $\text{KAu}(\text{CN})_2$

CAS 号：13967-50-5

危险性类别：第 6.1 类剧毒品。

化学类别：氰化物，贵金属盐类。

## 二、主要组成及性状

主要成份： $\text{Au} \geq 68.2\%$ 。

外观与性状：白色结晶粉末状。

主要用途：用于电镀金。

## 三、健康危害

侵入途径：吸入，食入，经皮吸收。

健康危害：吸入、摄入或经皮肤吸收均有毒，对眼睛、皮肤有刺激作用。口服剧毒，非骤死者，先出现感觉无力、头痛、眩晕、恶心、呕吐、四肢失去知觉，甚至呼吸停止而死亡。

## 四、急救措施

皮肤接触：立即用大量肥皂水清洗；就医咨询；

眼睛接触：立即提起眼睑，用大量流动清水或生理盐水彻底冲洗至少 15 分钟。就医。

吸入：迅速脱离现场至空气新鲜处。如呼吸困难，给输氧；如呼吸停止，立即进行人工呼吸。吸入亚硝酸异戊酯，肌肉注射 10%4-二甲基氨基苯酚。

食入：饮足量温水，催吐。洗胃，导泄。就医。

## 五、燃爆特性与消防

燃烧性：不燃

危险特性：遇酸或吸收空气中的二氧化碳、水可分解出剧毒的氰化氢气体。受热分解，放出高毒的烟气。

灭火方法：消防人员必须穿全身防火防毒服，在上风向灭火。灭火时尽可能将容器从火场移至空旷处。然后根据着火原因选择适当灭火剂灭火。使用干粉、砂土灭火，禁用含水灭火剂，禁用水，禁止使用二氧化碳。

## 六、泄漏应急处理

隔离泄漏污染区，限制出入。建议应急处理人员戴防尘口罩，穿防毒服。不要直接接触泄漏物。小量泄漏：小心扫起，转移至安全场所；也可以用次氯酸盐溶液冲洗，洗液稀释后放入废水系统。大量泄漏：收集回收或运至废物处理场所处置。

## 七、运输信息及储运注意事项

危规号：61001                      UN 编号：无资料

包装分类：I                      包装标志：14

包装方法：装入塑料瓶中，压紧铝箔盖，旋紧外盖，外加密封塑料袋，外套纸箱封存。运输时外套普通木箱。

储运环境温度（℃）：10--40

操作注意事项：密闭操作，提供充分的局部排风。防止粉尘释放到车间空气中。操作人员必须经过专门培训，严格遵守操作规程。建议操作人员佩戴防尘面具（全面罩），穿胶布防毒衣，戴橡胶手套。避免产生粉尘。避免与酸类接触。配备泄漏应急处理设备。倒空的容器可能残留有害物。

储存注意事项：储存于阴凉、干燥、通风良好的库房。远离火种、热源。防止阳光直射。包装密封。应与酸类、食用化学品分开存放，切忌混储。储区应备有合适的材料收容泄漏物。应严格执行剧毒物品“五双”管理制度。

## 八、防护措施

工程控制：生产过程密闭，加强通风。

呼吸系统防护：空气中浓度超标时，建议佩戴过滤式防毒面具（半面罩）。紧急事态抢救或撤离时，应该佩戴空气呼吸器或氧气呼吸器。可能接触其粉尘时，必须佩戴空气呼吸器。

眼睛防护：戴化学安全防护镜。

身体防护：穿防毒物渗透工作服。

手防护：戴橡胶手套。

其它：工作场所禁止吸烟；进食和饮水，饭前要洗手。工作毕，沐浴更衣。注意个人卫生。

## 九、理化性质

熔点（℃）：无资料                      沸点（℃）：无资料

相对密度（水=1）：3.45

蒸气相对密度（空气=1）：无资料

饱和蒸气压（kPa）：无资料

辛醇/水分配系数的对数值：无资料

燃烧热（KJ/mol）：无意义

临界温度（℃）：无意义                      临界压力（Mpa）：无资料

溶解性：易溶于水；微溶于醇，不溶于醚。

## 十、稳定性和反应活性

稳定性：稳定。                      聚合危害：不聚合

避免接触的条件：潮湿空气。

禁忌物：强氧化剂，酸类。

燃烧(分解)产物：氰化物、氰化氢。

## 十一、毒理学资料

急性毒性: LD<sub>50</sub> 20.9mg/kg(大鼠经口)。

刺激性: 对眼睛、皮肤有刺激作用。

亚急性和慢性毒性: 无资料。

生殖毒性: 无资料

致癌性: 无资料。

致突变性: 无资料。

## 十二、环境资料

该物质对环境有危害, 不要让该物质进入环境。应特别注意对水体的污染。

## 十三、废弃处理

根据国家和地方有关法规的要求处置。或与厂商或制造商联系, 确定处置法。

## 十四、运送资料

国际运送规定: 按毒害品化学品储运。

国内运送规定: 按毒害品化学品储运。

特殊运送方法及注意事项: 运输时必须经公安机关批准, 凭准运证方可起运。铁路运输时应严格按照铁道部《危险货物运输规则》中的危险货物配装表进行配装。运输前应先检查包装容器是否完整、密封, 运输过程中要确保容器不泄漏、不倒塌、不坠落、不损坏。严禁与酸类、氧化剂、食品及食品添加剂混运。运输时运输车辆应配备泄漏应急处理设备。运输途中应防曝晒、雨淋, 防高温。公路运输时要按规定路线行驶, 禁止在居民区和人口稠密区停留。

## 十五、法规资料

《危险化学品安全管理条例》(2002 年 3 月 15 日起施行), 《工作场所安全使用化学品规定》([1996]劳部发 423 号)等法规, 针对化学危险品的安全使用、生产、储存、运输、装卸等方面均作了相应规定; 《常用危险化学品的分类及标志》(GB 13690-92)将该物质划为第 6.1 类毒害品; 《剧毒物品分级、分类与品名编号》(GA 57-93)中, 该物质属第一类 A 级无机剧毒品。

## 十六、其他资料

参考文献: 美国 USP 药典, IC 文摘

制表单位: 深圳鑫华昌表面处理技术有限公司

联系电话: 400-0505-218

制表日期: 2015-03-25

# 物質安全資料表(MSDS)

## 一、物质厂商资料

名稱：连续镀镍	產品編號：BL-2015-1-11-01
制造商或供应商名称：永艺发金属制品（深圳）有限公司	
制造商或供应商地址：深圳市宝安区松岗镇江边工业区创业三路 14 号 12 栋 1A	
制造商或供应商电话：0755-33181901	傳真：0755-33181903

## 二、物质成份名称资料(原材料、药水名称)

原材料名称	镀液含量%
氨基磺酸镍	10%
氯化镍	0.8%
硼酸	3.5%
添加剂	0.3%

## 三、危害辨别资料：

最重 要危 害與 效應	健康危害效應：无相关数据
	環境影響：十二项生态资料内容
	物理性及化學性危害：十六项安全性及反应性
	特殊危害：无相关资料
主要症狀：无相关资料	
物質危害:本产品在生产过程中, 由于都是化学品, 操作不当, 会引起皮肤发痒\腐烂\红肿\恶心, 对于人体吸入, 会造成刺激性伤害, 需戴防护用具, 电镀成品后不具有危险性.	

## 四、急救措施：

不同暴露途徑之急救方法：

吸入：一将患者立即撤离现场, 移至通风良好的地方休息, 给氧呼吸.

皮膚接觸：脫下被污染的衣服，立即用大量水清洗接觸部位，如有發炎應就醫。

眼睛接觸：立即用大量水清洗眼睛達 15 分鐘，並立即就醫。

食入：飲用大量水或食鹽水，並催吐就醫

最重要症狀及危害效應：一

對急救人員之為防護：一

對醫師之提示：一



## 五、防火措施

適用防火劑：1、水霧

2、噴水

3、二氧化碳

4、化學乾粉

滅火時可能遭受之特殊危害：—不可燃物不适用.

特殊滅火程序：—不可燃物不适用

消防人員之特殊防護裝設：穿戴自攜式呼吸器及防護衣

## 六、洩漏處理方式：

個人應注意事項：防護手套, 轻拿轻放/

環境注意事項：不能將濃度高的液體排入河川

清理方式：使用木屑、砂土吸附，然後以水沖洗

## 七、安全處置與儲存方式

處置：穿戴安全眼鏡，防護手套

儲存：避免陽光直接照射或接觸高溫物及強氧化物，保存期限一年

## 八、暴露預防措施

工程參數：—无相关数据

控制參數：—无相关数据

個人防護設備：防護手套

呼吸防護：設製排氣裝置

手部防護：防護手套

眼睛防護：—

皮膚及身體防護：衣物

衛生措施：1、工作場所嚴禁飲食及抽煙

2、維持作業場所清潔

## 九、物理及化學性質

物質狀態：固體

顏色：銀白色

酸鹼度：—

分解溫度：—

自然溫度：—

蒸氣壓：—

密度：—

狀態：依产品形状—

氣味：无

沸點/沸點範圍：

閃火點：—

測試方法：V 開杯 閉杯

爆炸界限：—

蒸氣密度：—

溶解度：—

## 十、安全性及反應性

安全性：安全，無聚合危險性  
特殊狀況下可能之危害反應：－  
應避免之：不通气通风.  
應避免之物質：不可與氧化性物質，有機過氧化物放置同一場所  
危害分解性：無

十一、毒性資料

急毒性：無  
局部效應或皮膚腐蝕性：無  
致敏感性或刺激性：無  
慢毒性或長期毒性：强酸碱对皮肤, 肌肉有腐蚀危害性.

十二、生態資料

可能之生態影響/環境流佈：水中生物分解度低, 会对环境造成影响.

十三、廢棄處置方法

廢棄處置方法：依據當地環保法規處理

十四、運送資料

国内/國際運送規定：无相关数据  
特殊運送方法及注意事項：应注意会有滑落, 掉落之危险发生, 不可直接接触.

十五、法規資料

適用法規：劳动法中, 工作环境, 空气安全标准要求.

十六、其他資料

制表单位	永艺发金属制品（深圳）有限公司	地址	深圳市宝安区松岗镇江边工业区创业三路
制表日期	2015-1-5	有效日期	一年
审 核	譚伙庆	制表人	谢玉梅



## POLYFLON PTFE M Molding Powder

Safety Data Sheet  
SDS Number: 20031

Issued: 2010-01-05  
Revised(0.4): 2012-12-10

### 1 - Chemical Product and Company Identification

#### 1.1 Chemical Product

Trade name POLYFLON PTFE M Molding Powder  
Grade name M-18, M-18F, M-531, M-532, M-532C, M-533, M-536, M-C26, M-C27, M-C28

#### 1.2 Company Identification

##### Manufacturer

Name DAIKIN FLUOROchemicals (CHINA) CO., LTD.  
Add CHANGSHU INTERNATIONAL CHEMICAL INDUSTRIAL PARK, HAIYU TOWN,  
CHANGSHU, JIANGSU 215522 CHINA  
Tel : (+86) 512-5232-2266 Fax : (+86) 512-5232-2366

Supplier in US DAIKIN AMERICA INC.  
20 OLYMPIC DRIVE, ORANGEBURG, NEW YORK 10962  
Tel: (+1)800-365-9570 9am to 5 pm Eastern Standard Time

#### 1.3 Emergency Telephone

Company: (+86)512-5232-0949 US: (+1)256-306-5000

# POLYFLON PTFE M Molding Powder

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## 2 - Hazards Identification

GHS label elements      Void

## 3 - Composition Information

Chemical characterization:  
CAS No. Description  
9002-84-0      Polytetrafluoroethylene

## 4 – First aid Procedures

- |                         |  |
|-------------------------|--|
| <b>4.1 Inhalation</b>   | Supply fresh air; consult doctor in case of complaints.  |
| <b>4.2 Skin Contact</b> | Immediately wash with water and soap and rinse thoroughly.<br>After contact with the molten product, cool rapidly with cold water. |
| <b>4.3 Eyes Contact</b> | Rinse opened eye for several minutes under running water.  |
| <b>4.4 Ingestion</b>    | If symptoms persist consult doctor .   |
- **Information for doctor:** Vapors and fumes liberated during hot processing(above 260°C) with this material may cause flu-like symptoms (chills, fever and sometimes, cough) that may not occur until several hours after exposure and typically pass within about 36 to 48 hours.

## 5 – Fire-fighting Measures

- 5.1 Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- 5.2 Special hazards caused by the substance, its products of combustion or resulting gases:**  
Formation of toxic gases is possible during heating or in case of fire.
- 5.3 Protective equipment:** Wear fully protective suit.

## 6 - Accidental Release Measures

- 6.1 Person-related safety precautions:** Not required.
- 6.2 Measures for environmental protection:**  
Do not allow product to reach sewage system or any water course.
- 6.3 Measures for cleaning/collecting:** Pick up mechanically.
- 6.4 Additional information:**  
See Section 8 for information on personal protection equipment.  
No dangerous substances are release.

## 7 - Handling and Storage

### 7.1 Handling

# POLYFLON PTFE M Molding Powder

Safety Data Sheet  
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## Information for safe handling:

Extractors are required on all machines used for thermal processing or splinter removal processes.

### 7.2 Storage

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Protect from contamination.

## 8 - Exposure Controls and Personal Protection

### 8.1 Ingredients with limit values that require monitoring at the workplace:

Not required.

**Additional information:** The lists valid during the making were used as basis.

### 8.2 Personal Protective Equipment:

#### General protective and hygienic measures:

Wash hands before breaks and at the end of work.

Keep away from tobacco products.

Avoid contact with the skin.

#### Respiratory protection:

For conditions where exist a potential for significant exposure to fumes and/or toxic vapour use a full-face-mask with the acid and organic vapor cartridges.

**Protection of hands:** Synthetic rubber gloves.

**Eye protection:** Safety glasses.

**Body protection:** Protective work clothing.

## 9 - Physical and Chemical Properties

Appearance	Powder
Colour	White
Odour	Odourless
Boiling point	Undetermined
Melting point	320-330°C
Flash Point	Not applicable.
Decomposition temperature	470°C (0.1%TG)
Density	2.1~2.2g/cm <sup>3</sup>
Flammability(solid, gaseous)	Product is not flammable.
Danger of explosion	Product does not present an explosion hazard.
Solubility in water	Insoluble

## 10 - Stability and Reactivity

### 10.1 Thermal decomposition/conditions to be avoided:

Even at the temperatures reached during the normal hot processing of fluoropolymers fume will be generated, that will present a potential health hazard.

To avoid thermal decomposition do not overheat.

### 10.2 Dangerous reactions:

No dangerous reactions known.

### 10.3 Dangerous decomposition products:

Danger of toxic fluorine based pyrolysis products.



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## 11 – Toxicological Information

**11.1 Acute toxicity:** No data.

**11.2 Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

## 12 - Ecological Information

**12.1 Aquatic toxicity:** No further relevant information available.

**12.2 Other information:**

The product is insoluble in water and the biodegradation and ecotoxicity is expected to be low.

## 13 - Disposal Considerations

**13.1 Recommendation:** Disposal must be made according to official regulations.

**13.2 Uncleaned packaging:** Disposal must be made according to official regulations.

## 14 - Transportation Information

**14.1 UN "Model Regulation":** -

## 15 - Regulatory Information

**15.1 Safety Phrases**

15: Keep away from heat.

21: When using, do not smoke.

## 16 - Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviations and acronyms:

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)