DLK 德力康电子

承 认 书

SPECIFICATION FOR APPROVAL

客 户：佳士达
CUSTOMER

品 名：D-SUB R/A 12.5H CONN.
DESCRIPTION

客户料号：2K.24013.B15
BUYER P/N.

DLK 料号：DSB4WD-15LM1YN3PHF
DLK P/N

客户承认意见栏 CUSTOMER APPROVED BY

客户签字承认OK！

深圳市德力康电子科技有限公司
SHENZHEN DLK ELECTRONICS TECHNOLOGY CO., LTD.
地址：深圳市西丽镇大磡村王京坑 92 号
TEL：0755-88841180 FAX：0755-26994489
昆山德力康电子科技有限公司
KUNSHAN DLK ELECTRONICS TECHNOLOGY CO.,LTD
地址：昆山市淀山湖镇黄浦江南路 278 号
TEL：0512-57498666 FAX：0512-57498555

核准		审核		制作	丁沁	日期	2015 年 02 月11 日

承　认　书

SPECIFICATION FOR APPROVAL

客　　户：佳 士 达
CUSTOMER

品　　名：D-SUB R/A 12.5H CONN.
DESCRIPTION

客户料号：2K.24013.B15
BUYER P/N.

DLK 料号：DSB4WD-15LM1YN3PHF
DLK P/N

客户承认意见栏 CUSTOMER APPROVED BY

深圳市德力康电子科技有限公司
SHENZHEN DLK ELECTRONICS TECHNOLOGY CO., LTD.
地址：深圳市西丽镇大磡村王京坑 92 号
TEL：0755-88841180　FAX：0755-26994489
昆山德力康电子科技有限公司
KUNSHAN DLK ELECTRONICS TECHNOLOGY CO.,LTD
地址：昆山市淀山湖镇黄浦江南路 278 号
TEL：0512-57498666　FAX：0512-57498555

核准		审核		制作	丁 沁	日期	2015 年 02 月11 日

目　录

Directory

1. 封面

Cover

2. 目录

Directory

3. 履历表

Resume

4. 图面

Drawings

5. 材质清单

Material list

6. UL 黄卡

UL Card

7. 规格书

Specification

8. 环境管理物质不使用证书

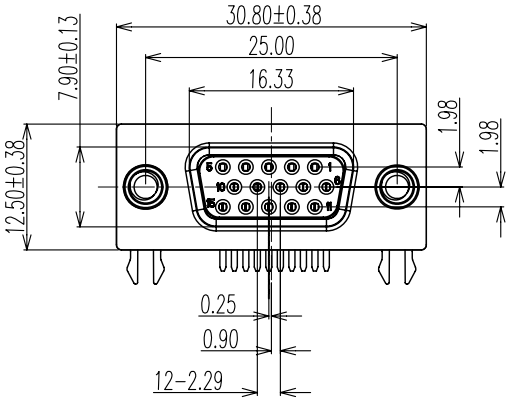
Environmental management material don't use certificate

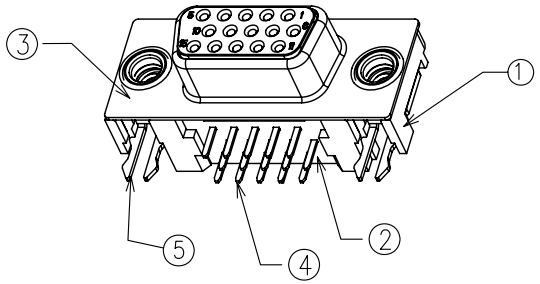
COMPONENT SPEC VERSION RECORD

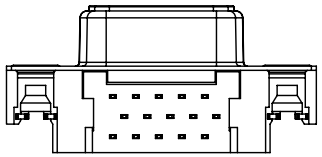
CUSTOMER PART NO.	2K.24013.B15	DLK PART NO.	DSB4WD-15LM1YN3PHF	
VER	MINUTE OF CHANGES		DLK CHECK	RELEASE DATE
A	CHECKED AND RELEASED		丁 沁	2015-02-11

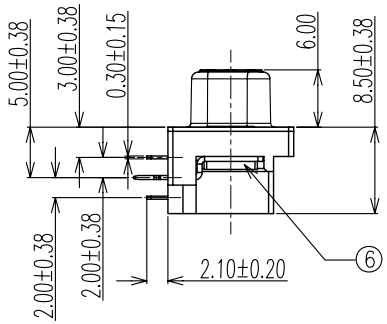
符合"DLK环境管理物质技术标准"

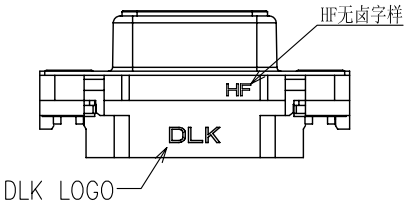
工程变更通知单 ECN(DCN) NO.	版本 REV	日期 DATE	说明 DESCRIPTION	变更 CHANGE	核准 APPRO.
————	X0	20150211	NEW	——	——

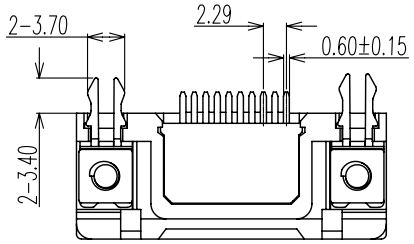


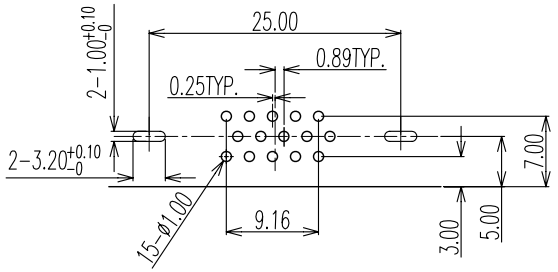












PCB LAYOUT(T=1.20mm)
TOP VIEW

DSB4W D-15 L M1 Y N3 P HF
① ② ③④ ⑤ ⑥ ⑦ ⑧ ⑨

① PRODUTION CODE（产品编码）:
DSB4W: D-SUB-15PIN(3.0) CONN
② CHARACTER（特征）:
D: DIP TYPE
③ POSITION（位数）:
15: 15PIN
④ COLOR OF HOUSING(本体颜色）:
L: BLUE COLOR
⑤ PLATING OF CONTACT(端子电镀）:
M1 :GOLD FLASH AND TIN PLATED（镀雾锡）
⑥ PACKAGE(包装）:
Y :TRAY PACKAGE
⑦ PLATING OF SHELL(铁壳电镀）:
N3:NI PLATD
⑧ TYPE:
P：无螺丝(后盖全封)
⑨ 特殊码:
HF:无卤规格

NO.	ITEM	Q'TY	DESCRIPTION	FINISH
6	RIVET	2	COPPER ALLOY	Ni PLATED
5	BOARD LUCK	2	FERROALLOY	Tin PLATED
4	Contact	15	COPPER ALLOY	Au AND Tin PLATED
3	Shell	1	FERROALLOY	Ni PLATED
2	Cover	1	PBT+GF30	UL94V-0,Black
1	Housing	1	PBT+GF30	UL94V-0,BLUE

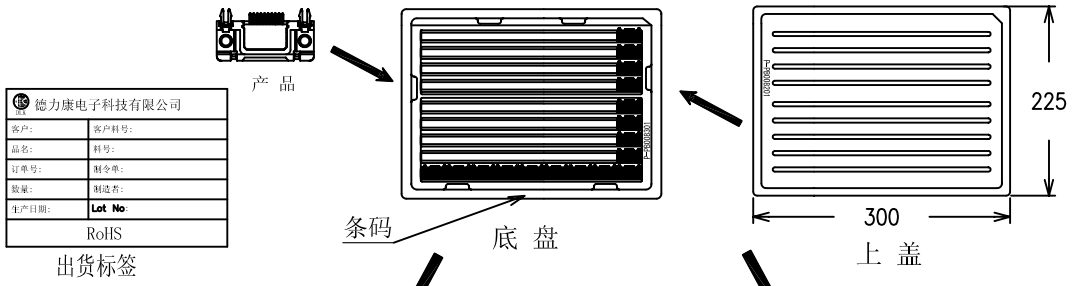
GENERAL TOLERANCE UNLESS OTHERWISE NOTED

Angle	±5°
X.	±0.50
.X	±0.35
.XX	±0.25
.XXX	±0.15
A4	

德力康电子科技有限公司
DLK DELIKANG ELECTRONICS TECHNOLOGY CO.,LTD

C	名称 TITLE:	D-SUB R/A 12.5H CONN	料号 PART NO:	DSB4WD-15LM1YN3PHF	
	档案名称 FILE NAME.	C-DSB4W-00-HF	PART NO: (OLD)	——	
DRAWING	王永辉	CHECKED		APPROVED	
UNIT:	mm	SCALE	1:1	SHEET: 1 of 1	

工程变更通知单 ECN(DCN) NO.	版本 REV	日期 DATE	说明 DESCRIPTION	改变 CHANGE	承认 APPRO.
———	X0	20150130	NEW RELEASE	———	———



德力康电子科技有限公司	
客户:	客户料号:
品名:	料号:
订单号:	制令单:
数量:	制造者:
生产日期:	Lot No:
RoHS	

出货标签

包装说明：

1.数量：

一盘=90Pcs，

一箱装两叠=1530(17盘)+1530(17盘)=3060Pcs

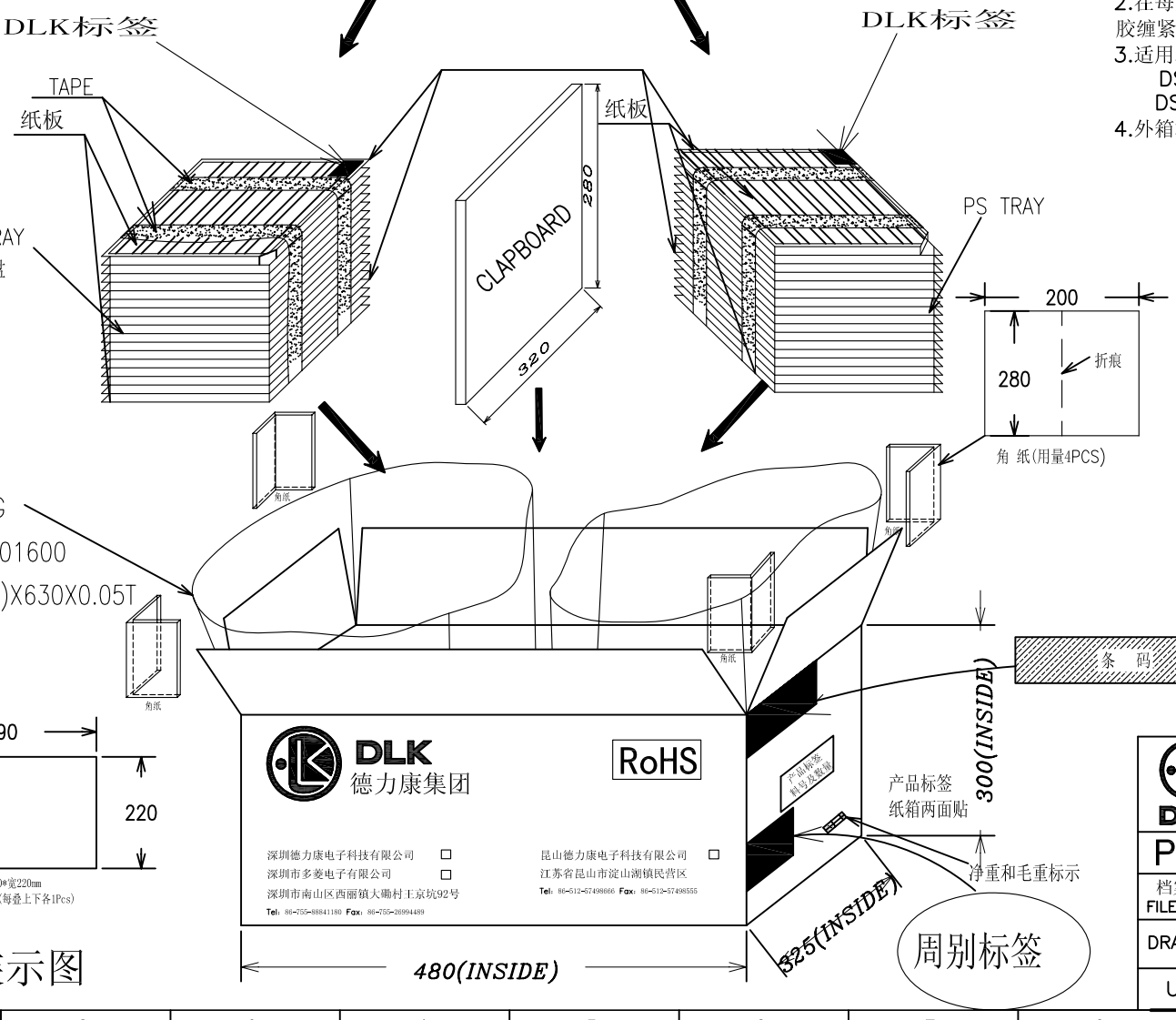
2.在每叠产品右上角帖标签，每叠上下各放一纸板并用透明胶缠紧;每叠需套一PE袋,加干燥剂，封口后放入纸箱;

3.适用料号：

DSB4WD-15LM1YN3P

DSB4WD-15LM1YN3PHF

4.外箱材质K=K,要求破裂强度为6Kg.



包装示图

名称	备注
纸箱尺寸	480*325*300
装箱数量	见上面说明
堆栈层数	5层
纸箱抗压耐破	6Kg
纸箱材质	K=K
包装后整箱数量	23.6Kg

名称	料号	规格
护角板	P-GB004200	(290L*220W)mm
PE袋	P-PE001600	(500+300)*630*0.05T(mm)
纸板	P-GB004500	(290L*220W)mm
纸隔板	P-GB004100	320L*280w)mm
吸塑盒底盒	P-PB008301	PS,T=0.8mm,(300L*225W*24H)mm
吸塑盒上盒	P-PB008201	PS,T=0.6mm,(300L*225W*24H)mm
纸箱	P-OC007400	(480*325*300)mm

德力康电子科技有限公司

DLK DELIKANG ELECTRONICS TECHNOLOGY CO.,LTD

P 名称 TITLE:	DSB4W 包装示意图		料号 PART NO:	DSB4WD-15LM1YN3*	
档案名称 FILE NAME.	P-DSB4W-00-00		PART NO: (OLD)	———	
DRAWING	王永辉	CHECKED	———	APPROVED	严成旺
UNIT	mm	SCALE	1:1	SHEET: 1 of 1	

Material BOM List

料件名稱/料號 ： DSB4WD-15LM1YN3PHF

廠商名稱 ： DLK　　版本 Version :A

Customer P/N :2K.24013.B15　　日期 Date ： 2015.02.11

依循國際標準或是協會標準:依据IEC60807-3协会规范

項目 ITEM	部位 Position description	廠商名稱 supplier	底材材質 Bottom material	FLAME , UL NO	顏色,色碼 Color , Number	底材主要組成 Component of Bottom material	第一層材質 Material of first layer	鍍層濃度範圍 Plating layer thickness	第二層材質 Material of Second layer	鍍層濃度範圍 Plating layer thickness
1	塑胶主体	泰塑/DLK	PBT	UL:E321019 UL94V-0	Blue					
2	后盖	泰塑/DLK	PBT	UL:E321019 UL94V-0	Black					
3	端子	广铜/DLK	C2680（H65）			Cu	Ni	50u"Min	接触端：Au 焊锡端：Matte Sn	接触端：1u"Min 焊锡端：100u"Min
4	外壳	德分/DLK	SPCC			Fe	Cu	50u"Min	Ni	80u"Min
5	叉脚	德分/DLK	SPCC			Fe	Ni	50u"Min	Sn	100u"Min
6	铆钉	骅杰/DLK	C3602			Cu	Ni	50u"Min		

Note = Paint thickness unit : u"

Approve:严成旺　　Check:N/A　　Prepare:丁沁

Need more information? **Click Here** to go to the UL iQ™ for Plastics database

Component - Plastics **E321019**

TAISU PLASTIFICATION MATERIAL SCI&TECH CO LTD

TAISU INDUSTRIAL ZONE, FENGXIN RD, GUANGMING NEW DISTRICT, SHENZHEN GUANGDONG 518107 CN

PBT T301 00 GF

Polybutylene Terephthalate (PBT), glass reinforced, furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC, RD, BK	0.4	V-0	4	1	75	75	75
ALL	0.8	V-0	3	1	75	75	75
	1.6	V-0	2	1	75	75	75
	3.0	V-0	0	1	75	75	75

Comparative Tracking Index (CTI): -

Inclined Plane Tracking (IPT): -

Dielectric Strength (kV/mm): **30**

Volume Resistivity (10^X ohm-cm): **18**

High-Voltage Arc Tracking Rate (HVTR): -

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

Dimensional Stability (%): -

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: 2013-03-28

Last Revised: 2013-03-28

© 2013 UL LLC

IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	**IEC 60695-11-10**	**Class (color)**	**0.4**	**V-0 (NC, RD, BK)**
			0.8	**V-0 (ALL)**
			1.6	**V-0 (ALL)**
			3.0	**V-0 (ALL)**
Glow-Wire Flammability (GWFI)	**IEC 60695-2-12**	**C**	**0.4**	**960**
			0.8	**960**
			1.6	**960**
			3.0	**960**
Glow-Wire Ignition (GWIT)	**IEC 60695-2-13**	**C**	**0.4**	**825**
			0.8	**825**
			1.6	**825**
			3.0	**825**
IEC Comparative Tracking Index	**IEC 60112**	**Volts (Max)**	**3.0**	**CTI2**
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^2**	**-**	**-**
ISO Izod Impact	**ISO 180**	**kJ/m^2**	**-**	**-**
ISO Charpy Impact	**ISO 179-2**	**kJ/m^2**	**-**	**-**

© 2013 UL LLC

The materials covered in this database are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. THE FINAL ACCEPTANCE OF THE COMPONENT IS DEPENDENT UPON ITS INSTALLATION AND USE IN COMPLETE PRODUCTS SUBMITTED TO UNDERWRITERS LABORATORIES.

Notice of Disclaimer

D-SUB CONN.測試項目管控LIST

Item	測試項目	重點管控	備註
1	接觸電阻	≦ 30m OHM	
2	絕緣電阻	≧ 5000 M OHM	
3	耐電壓	**500V AC 1min,** ~~	
4	尺寸	符合規格要求	
5	外觀	無變形, 無破損,無污穢,無氧化	
6	MARKING	清晰,完整	
7	插拔力	符合規格要求	
	Terminal strength	符合規格要求	
8	可焊性	Temperature ≦ 235 +/- 5℃ , Dip Time ≦ 2.5 +/- 0.5 sec. Requirement: 90 % COVERAGE以上	
9	耐焊接性	Temperature ≧ 260℃ Dip Time ≧ 10 +/- 0.5 sec Requirement: 符合RoHS 零件耐焊接熱標	
ORT 測試			
9	Salt Spray Test	Temperature : 35℃ Density: 5% , 48hr	
10	Durability(耐插拔)	Life cycles based on SPEC	

1. 電氣規格

1.1 料件工作溫度範圍

料件使用溫度範圍:-25℃～105℃.

1.2 料件最高工作溫度

料件最高溫度:105℃.

1.3 料件存儲溫度範圍

料件存儲溫度範圍:-20℃～100℃.

1.4 料件存儲期限

料件存儲期限:6 個月 （自产品出厂之日起储存期限为6个月）

1.5 料件工作電氣極限要求

額定電流:3.0 A 250V

接觸阻抗:30mΩ以下

絕緣阻抗:5000MΩ以上 500VDC

耐電壓:接觸璃間加電壓500V AC/1 分鐘以上,感度電流 1mA,不可有絕緣破裂.

機械壽命:500 CYCLES

PRODUCT SPECIFICATION

1.0 Applicable Connector: Applicable to DLK D-SUB Series connector.

（适用于德力康公司 D-SUB 系列连接器.）

Scope: This specification covers the requirements for product performance and test methods of DLK's D-SUB Series Connectors of the part numbers specified as bellow.

（覆盖范围：此规格书内容含盖德力康公司 D-SUB 系列连接器产品性能及测试方法。）

2.0 Rating（要求）：

2.1 Rated Voltage : 250 V AC,DC（额定电压：250V）

2.2 Rated Current:3.0 A（额定电流：3.0A）

2.3 Electric Pressure: Keeping 60 second in AC 500V/1mA(耐压 500V AC 持续 60 秒）

2.4 Insulation Resistance: 5000 MΩ Min. in DC 500V(绝缘阻抗最小 5000 兆欧)

2.5 Contact Resistance: 30 mΩ Max. (接触阻抗最大 30 毫欧)

3.0 Test Condition（测试条件）：

All tests shall be performed as bellow conditions unless otherwise specified.

（所有的测试都在下列条件下完成，除非另有说明.）

3.1 Temperature range : +15℃to35℃. （ 温度：+15℃至 35℃）

3.2 Humidity range: 25%to85%.（湿度：25%至 85%）

3.3 Atmospheric Pressure : 860 to 1060 mber

（大气压力： 860 至 1060 兆帕）

4.0 Mechanical Characteristics（机械性能）

4.1 Insertion Force(for one pin)：240gf/Max.

4.2 Extraction Force(for one pin): 30gf/Min.

4.3 Stretching Force(from insulator to pin):1.0Kgf/Min

4.4 Insertion Force(mating connector):2.0 to 5.0Kgf;

4.5 Extraction Force(mating connector):1.0Kgf Min

5.0 Test Methods and Requirements（测试方法和要求）：

5.1 Examination of product（检查尺寸）：

Item (条目)	Test Description （测试内容）	Test Methods （测试方法）	Requirement （要求）

5.1.1	Examination of product Outward Appearance Structure （产品外形/尺寸检查）	Shall be confirm with eyes in accordance with each drawing. Shall be confirmed by using proper measuring instruments. （依照图面要求对产品目视检查，再用测量工具，按图面要求测量尺寸）	Outward appearance shall be good without such injurious problem structure shall be meet the design and dimensional requirements of drawing （外观良好，无任何有害问题；结构符合图面设计要求。）

5.2 Electrical performance（电气性能）：

Item (条目)	Test Description （测试内容）	Test Methods （测试方法）	Requirement （要求）
5.2.1	Contact Resistance （接触阻抗）	Mated connectors. Contact: measure by dry circuit, 20 mvolts maximum., 10mA Shell: measured by open circuit, 5 Volts maximum, 100mA. (ANSI/EIA-364-06A-83) （配对的连接器，端子在回路施加直流最大 20mV 10mA 的电流；铁壳在回路施加直流最大 5V 100mA 的电流；再测量相对应端子或铁壳的电阻值）	Excluding conductor resistance : 30 mΩ maximum. （接触阻抗最大不能超过 30 毫欧）
5.2.2	DIP 脚之间接触阻抗	左 Dip 脚与右 Dip 脚之间 及 左右 Dip 脚分别与外铁壳 的电阻值	
5.2.3	Insulation Resistance （绝缘阻抗）	Unmated connectors, applied DC 500 Volts for 1minute between adjacent terminal. (ANSI/EIA 364-21, Method 302) （未交配的连接器，在相邻的端子间施加 DC 500V 的电压测试 1 分钟；）	5000MΩ minimum (unmated) （最小为 5000 兆欧）
5.2.4	Dielectric Strength （耐电压）	Unmated connectors, applied AC 500 Volts and leak current 1mA for 1minute between adjacent terminal . (ANSI/EIA 364-20,Method 301) （未交配的连接器，在相邻的端子间施加 AC 500V 的电压与 1mA 漏电流测试 1 分钟；	No Breakdown （没有损坏）

5.3 Mechanical Performance（机械性能）：

Item (条目)	Test Description （测试内容）	Test Methods （测试方法）	Requirement （要求）
5.3.1	Connector Insertion Force（插入力）	Solder each of the plug and receptacle connector to the P.C.Board then do insertion/extraction along the axis 3 times at speed 25mm. After place each of the P.C.Board onto the push-on/pull-off machine to be measurement the insertion force. (ANSI/EIA-364-13) （将公、母座焊接在 PCB 板上，再将 PCB 板置于插拔力实验机上，然后以每分钟 25mm 的速度沿轴向插拔 3 之次后再测试其插入力。）	Insertion force：2.0～5.0Kgf. 插入力： 2.0～5 .0Kgf.

5.3.2	Connector Withdrawal Force （拔出力）	Solder each of the plug and receptacle connector to the P.C.Board then do insertion/extraction along the axis 3 times at speed 25mm. After place each of the P.C.Board onto the push-on/pull-off machine to be measurement the insertion force. (ANSI/EIA-364-13) （将公、母座焊接在 PCB 板上，再将 PCB 板置于插拔力实验机上，然后以每分钟 25mm 的速度沿轴向插拔 3 之次后再测试其拔出力。）	Withdrawal Force：1.0Kgf Min. 拔出力： 1.0Kgf Min.
5.3.3	Durability （寿命）	Solder each of the plug and receptacle connector to the P.C. Board,then place each of the P.C. Board onto the push-on/pull-off machine,then do insertion / Withdrawal 500 cycles along the axis at speed of 100 ±50 cycles per hours （ANSI/EIA 364-09） （将公、母座焊接在 PCB 上，再将 PCB 板置于耐插拔实验机上，然后以每小时 100±50 次的速度沿轴向插拔 500 次）	1）Insertion force：2.0～5.0Kgf . 插入力： 2.0～5 .0Kgf . 2）Withdrawal Force：1.0Kgf Min. 拔出力： 1.0Kgf Min.
5.3.4	Terminal strength （端子强度）	Apply 5N gravity in the direction of the terminal of axis X,Y,Z for 10 seconds. After soldering and fixing the PC board properly, insert and withdraw 100 cycles. But the insertion force is 15N max. （在端子各方向加 5N 的重力（X，Y，Z 方向），时间 10 秒。焊接并固定好印刷线路板后，插拔 100 次。但插力在 15N 以下）	There are no crack,no damage,electrical performance normal. (端子无裂痕，损伤等；电气电能正常。)

5.4 Environmental Performance（环境性能）：

Item (条目)	Test Description （测试内容）	Test Methods （测试方法）	Requirement （要求）
5.4.1	Salt Spray （盐水喷雾）	Salt density:5% Temperature: 35± 2℃ 盐水浓度：5% 温度：35± 2℃ After keeping in above surrounding for 48 hours EIA-364-26	

膜厚類型	測試時間	判定
USB / DVI&D-SUB / DP CONN / HDMI / AC SOCKET		
鍍錫部位	24H	無氧化,銹蝕
鍍錫之焊錫部位	24H	
金属件與非金屬/折彎處/切口	24H	
外部連接 port	48H	
接觸端鍍金(包含 15u"與 15u"以上)	48H	
接觸端鍍金(包含 15u"以下上)	48H	

5.4.2	Withstand humidity （恒温恒湿）	Solder each of the plug and receptacle connector to the P.C.Board ,then mate them together and exposed at temperature of 40℃±2℃ and humidity of 90-95% for a period of 96 hours. after removal from chamber, socket shall be returned at room condition for a period of 2 hours. the socket shall be capable of. （ANSI/EIA-364-31） （将公母座连接器各自焊接于 PCB 板上后将其对插再暴露在温度为 40℃±2℃，湿度为 90-95%的恒温恒湿槽中放置 96 小时进行测试，完成测试后将插座取回在常温常湿下放置 2 小时后测定。）	1）Appearance: no damage (外观无损害) 2）Contact resistance: 30 mΩ Max. （接触阻抗最大 30 毫欧） 3）Insulation resistance: 5000 megaohms minimum. （绝缘阻抗最小 5000 兆欧） 4 ） dielectric withstanding Voltage: AC 500V No Breakdown. （耐电压 AC 500V 测试无损坏。）
5.4.3	Withstand heat （耐热）	The connector shall be exposed in a hot chamber at temperature of 70±2℃ for a period of 96 hours ,shall then be returned at room conditions for 2 hours. the socket shall be capable of satisfactory performance. （ANSI/EIA-364-17） (将连接器暴露在温度为 70±2℃的恒温恒湿槽中放置 96 小时后，再在室温下自然干燥 2 小时后，绝缘部分应无变形、裂痕、金属部分无变色。)	Appearance: no obvious damage on appearance and configuration （外观和构造无损坏）
5.4.4	Withstand cold （耐寒）	The connector shall be exposed in a cold chamber at temperature of -40℃±2℃ for a period of 96hours, shall then be returned at room conditions for 2 hours, the socket shall be capable of satisfactory performance. （ANSI/EIA-364-17） (将连接器暴露在温度为-40±2℃的恒温恒湿槽中放置 96 小时后，再在室温下自然干燥 2 小时后，绝缘部分应无变形、裂痕、金属部分无变色。)	Appearance: no obvious damage on appearance and configuration （外观和构造无损坏）
5.4.5	Composite temperature/humidity cyclic （高低温循环）	The socket shall be subjected to the condition described below, for a total of 5 cycles, first step -25℃±2℃/0.5h, second step: 85℃±2℃/0.5h ,shall then be returned at room condition for a period of 2 hours . （ANSI/EIA-364-17） (在下列条件下持续进行 5 次循环测试,第一步：-25℃±2℃/0.5h，第二步：85℃±2 ℃/0.5h，常温常湿中放置 2 小时后测定。)	1）Appearance: no damage (外观无损害) 2）Contact resistance: 30 mΩ Max. （接触阻抗最大 30 毫欧） 3）Insulation resistance: 5000 megaohms minimum. （绝缘阻抗最小 5000 兆欧） 4 ） dielectric withstanding Voltage: AC 500V No Breakdown. （耐电压 AC 500V 测试无损坏。）
5.4.6	Solderability （可焊性）	Immerse the solder pin of the connector in the solder bath at 235℃±5℃ for 2.5±0.5seconds. After dipped the pin in the flux for 5 seconds. （ANSI/EIA-364-52） （将端子脚浸入助焊剂中 5 秒，然后将端子脚浸入 235℃±5℃的锡炉中 2.5±0.5 秒.）	Solder wetting:90% of immersed area must show no voids，Pin holes. (粘锡面积：锡附着的面积应超过浸入表面积的 90%以上)
5.4.7	Resistance to soldering heat （耐焊接热）	Place the connector on the P.C.Board,then immerse the solder pin up to the surface of the board in the solder bath at 260℃+2℃ for 10±0.5 seconds.（ANSI/EIA-364-52） (将连接器置于 PCB 上,然后将露出 PCB 板表面的 Pin 脚部分浸入 260+2℃的锡炉中 10±0.5 秒)	1）Without deformation of case or excessive lossen.(塑胶不得有明显变形或损坏) 2）Electrical characteristics shall be satisfied.(电气特性必须符合规格)

5.4.8	Vibration （振动）	Solder each of plug and receptacle connector to the P.C.Board,then mate them together.place the mated connector firmly on the vibrator and apply the following condition shall be done. Amplitude:1.52 mm P-P or 147m/s2 {15G} Vibration frequency:10Hz-55Hz-10Hz/minute. Direction:along three mutually perpendicular direction. Sweep time:two hours along each direction,a total six hours. Electrical load: DC100ma current shall be flowed during the test. (ANSI/EIA-364-28) (将公母座各自焊接于 PCB 板上，然后将其对插再固定于振动机上，并施加下列条件) 振幅：1.52mm； 振动频率：一分钟内变换 10Hz-55Hz-10Hz； 方向：沿著三个互相垂直的方向； 时间：每个方向两小时，共 6 小时； 电力负载：施加 DC 100mA 电流测试。	1）No electrical discontinuity greater than 1 microsecond.shall occur. （电气上不能有超过 1 徼秒断讯的情形发生。） 2）Lossen,crack and breakage of the plastic part and other detrimental damage shall not be observed. （塑胶件不能有松脱破损或其它不利的损坏。） 3）Contact resistance: 30 mΩ Max. （接触阻抗最大 30 毫欧）

6.0 Test Sequence（测试顺序）：

Test Group (群组测试)		Sample Groups（群组样品）									
Test Item （项目）	Test Description （测试种类）	A	B	C	D	E	F	G	H	I	J
5.1.1	Examination of product(尺寸/外形检查)	1,9	1,9	1,5	1,7	1,3	1,3	1,9	1,3	1,3	1,5
5.2.1	Contact Resistance(接触阻抗)	3,7	2,6	2,4				2,6			2,4
5.2.2	Insulation Resistance(绝缘阻抗)		3,7		2,5			3,7			
5.2.3	Dielectric Withstanding Voltage(耐电压)		4,8		3,6			4,8			
5.3.1	Connector Insertion Force(插入力)	2,6									
5.3.2	Connector Withdrawal Force(拔出力)	4,8									
5.3.3	Durability(寿命)	5									
5.3.4	Terminal strength(端子强度)		5								
5.4.1	Salt Spray(盐水喷雾)			3							
5.4.2	Withstand humidity(恒温恒湿)				4						
5.4.3	Withstand heat(耐热)					2					
5.4.4	Withstand cold(耐寒)						2				
5.4.5	Composite temperature/humidity cyclic (高低温循环)							5			
5.4.6	Solderability(可焊性)								2		
5.4.7	Resistance to soldering heat(耐焊接热)									2	
5.4.8	Vibration(振动)										3
Number of Test Samples (Minimum)最小试样数量		5	5	5	5	5	5	5	5	5	5

环境管理物质不使用证书
（原材料及原材料厂家 **LIST**）

向贵司销售的零部件及组件的使用材料、包装材料等中未使用 **DLK**《环境管理物质技术标准》（**508000-D-002**）要求的管理物质（禁止使用对象）及其用途，特此证明。

且：零部件及组件的使用在材料，由以下成分构成。特此报告

1.零件料号：DSB4WD-15LM1YN3PHF

以下清单所列均质原材料为本产品中所用到的所有原材料

ITEM	Raw Material	Raw Material Supplier	Cd	Pb	Cr^{6+}	Hg	PBB/PBDE	Cl	Br	PAHs	第三方测试报告号码
			含量(ppm)	含量(ppm)	含量(ppm)	含量(ppm)	含量(ppm)	含量(ppm)	含量(ppm)	含量(ppm)	
Housing	PBT	泰塑/DLK	N.D	N.D	N.D	N.D	N.D	N.D	N.D		SCL01G45364002
Cover	PBT	泰塑/DLK	N.D	N.D	N.D	N.D	N.D	N.D	N.D		SCL01G009335001
Contact/ Board Luck	C2680 (H65)	广铜/DLK	N.D	20	Negative	N.D					CANML1404420501
Shell/ Shielding Case	SPCC	德分/DLK	N.D	N.D	Negative	N.D	N.D				RHS05F019183001
Rivet	C3602	骅杰/DLK	9	23708	Negative	N.D	N.D				SHAEC1420915204
Plating Ni	Ni	长风/DLK	N.D	15	Negative	N.D		N.D	N.D		SHAEC1414151604
Plating Sn	Matte Sn	长风/DLK	N.D	49	Negative	N.D		N.D	N.D		SHAEC1414151608
Plating Au	Au	同心/DLK	N.D	110	Negative	N.D					ECL01G029554002E
Plating Sn	Sn	长风/DLK	N.D	41	Negative	N.D		N.D	N.D		SHAEC1414151606

2、 ICP 测试对象物质（塑料（含橡胶）涂料、油墨和线材料中的镉和铅）测试要求的 ICP 数据另附。ICP 测试对象物质的成分表或 MSDS 另附。

备注：请填写该类零部件用到的所有部件、原材料、辅助材料的详细信息。

必须详细、正确的填写部件、原材料、辅助材料的供应商名称、材料型号

主管/职位：管理者代表

公司全称：德发博电子科技有限公司

公司公章：

DLK ELECTRONICS TECHNOLOGY CO.,LTD

COMPONENT QUALIFICATION REPORT

PRODUCT: D-SUB R/A 12.5H CONN.

PART NO.: DSB4WD-15LM1YN3PHF

REV. : A

RELIABILITY TEST RESULT:

■PASS □ NO PASS

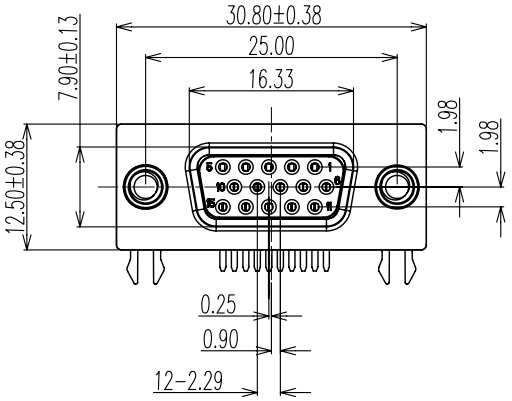
APPROVED：Li Xiaojun

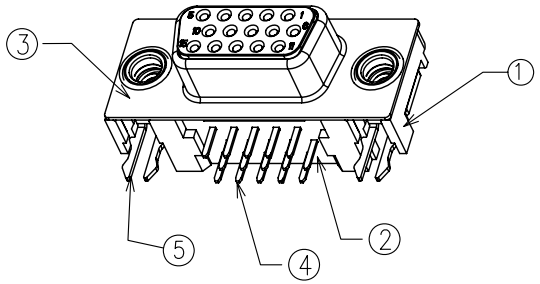
CHECKED：N/A

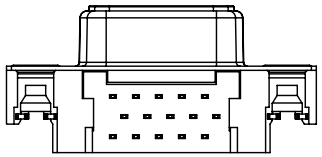
TEST BY：Tian tian

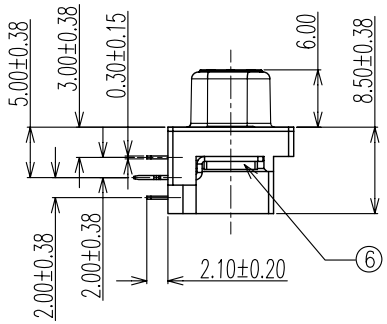
符合"DLK环境管理物质技术标准"

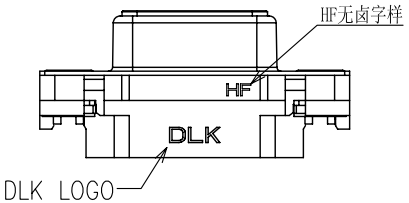
工程变更通知单 ECN(DCN) NO.	版本 REV	日期 DATE	说明 DESCRIPTION	变更 CHANGE	核准 APPRO.
————	X0	20150211	NEW	——	——

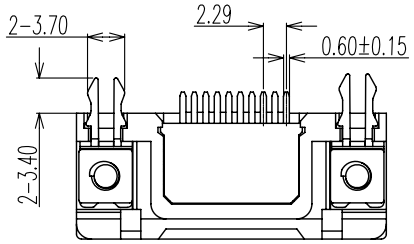


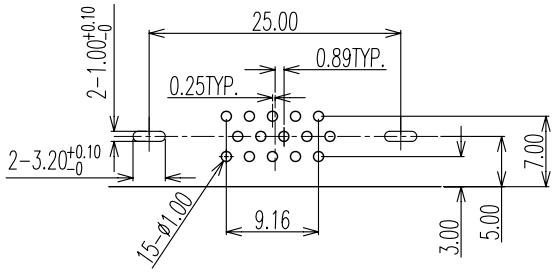












PCB LAYOUT(T=1.20mm)
TOP VIEW

DSB4W D-15 L M1 Y N3 P HF
① ② ③④ ⑤ ⑥ ⑦ ⑧ ⑨

① PRODUTION CODE（产品编码）:
DSB4W: D-SUB-15PIN(3.0) CONN
② CHARACTER（特征）:
D: DIP TYPE
③ POSITION（位数）:
15: 15PIN
④ COLOR OF HOUSING(本体颜色）:
L: BLUE COLOR
⑤ PLATING OF CONTACT(端子电镀）:
M1 :GOLD FLASH AND TIN PLATED（镀雾锡）
⑥ PACKAGE(包装）:
Y :TRAY PACKAGE
⑦ PLATING OF SHELL(铁壳电镀）:
N3:NI PLATD
⑧ TYPE:
P：无螺丝(后盖全封)
⑨ 特殊码:
HF:无卤规格

NO.	ITEM	Q'TY	DESCRIPTION	FINISH
6	RIVET	2	COPPER ALLOY	Ni PLATED
5	BOARD LUCK	2	FERROALLOY	Tin PLATED
4	Contact	15	COPPER ALLOY	Au AND Tin PLATED
3	Shell	1	FERROALLOY	Ni PLATED
2	Cover	1	PBT+GF30	UL94V-0,Black
1	Housing	1	PBT+GF30	UL94V-0,BLUE

GENERAL TOLERANCE UNLESS OTHERWISE NOTED

Angle	±5°
X.	±0.50
.X	±0.35
.XX	±0.25
.XXX	±0.15
A4	

德力康电子科技有限公司
DLK DELIKANG ELECTRONICS TECHNOLOGY CO.,LTD

C	名称 TITLE:	D-SUB R/A 12.5H CONN	料号 PART NO:	DSB4WD-15LM1YN3PHF	
	档案名称 FILE NAME.	C-DSB4W-00-HF	PART NO: (OLD)	——	
DRAWING	王永辉	CHECKED		APPROVED	
UNIT:	mm	SCALE	1:1	SHEET: 1 of 1	

TEST SEQUENCE FOR ELECTRICAL COMPONENTS

CUSTOMER D/N :

CUSTOMER P/N :2K.24013.B15
SUPPLIER NAME :DLK ELECTRONICS TECHNOLOGY CO.,LTD
SUPPLIER P/N : DSB4WD-15LM1YN3PHF
DATE : 2015-02-11 REV:A

1.Mechanical Dimension				Max	Min.	AVERAGE	CP/CPK	OK/NG	Page
1.1 Construction & Dimension	The following key Dimension are needed to measure based on Approved SPEC	5 PCS							
	1.Pin Length		2.10±0.20	2.16	2.10	2.14	/	OK	12
	2.Pin diameter dimension		0.60±0.15	0.67	0.61	0.64	/	OK	12
	3.Internal structure dimension of male and female matching		2.29±0.25	2.29	2.21	2.25	/	OK	12
	4. Pin electroplated thickness		Au 1u" min	4.77	3.12	3.68	/	OK	1
	5. HDMI SMT Pin 平整度		N/A						
	6. DVI CONN 需符合DDWG 規範要求		N/A						
	7. D-SUB CONN 內部端子偏心量≦ 塑膠杯口1/3		OK	OK	OK	OK	/	OK	
2.Electrical Characteristics									
2.1 Contact Resistance	20 mV / 10m A	20PCS	≦ 30m OHM	4.00	3.10	3.57	/	OK	3
2.2 Insulation Resistance	5000MΩ DC500V	20PCS	5000M OHM Min.	>5000M	>5000M	>5000M	/	OK	3
2.3 Withstand Voltage	AC500V 1min	20PCS	No breakdown	OK	OK	OK	/	OK	3
2.4 Rated Current	3.0A 250V AC	20PCS	Based on Approved Spec	OK	OK	OK	/	OK	3
3.Mechanical Characteristics									
3.1 Insertion Force	2.0-5.0Kgf	20PCS	Based on Approved Spec	2.29	2.12	2.19	/	OK	5
3.2 Withdrawal Force	1.0Kgf Min	20PCS	Based on Approved Spec	1.55	1.41	1.47	/	OK	5
3.3 Pin Retention Force	≥9.8N(1.0kgf)	20PCS	≥9.8N(1.0kgf)	2.64	2.22	2.45	/	OK	5
3.4 Terminal strength	2.94N(0.30kgf)	20PCS	2.94N(0.30kgf)	OK	OK	OK	/	OK	5
3.5 Durability	Mated and unmated 500 cycles Contact resistance after test : 30 mΩ(Max)	10PCS	Contact resistance : 30 mΩ(Max.)	4.50	3.80	4.14	/	OK	5

4.Environmental Test									
4.1 Cold Test	Temperature : -40 ± 2℃ , 96 hr	5PCS	Contact resistance : 30 mΩ(Max.)	3.90	3.40	3.64	/	OK	6
4.2 Dry Heat Test	Temperature : 70 ± 2℃ , 96 hr	5PCS	Contact resistance : 30 mΩ(Max.)	4.10	3.40	3.80	/	OK	7
4.3 Humidity Test	Temperature : 40℃ , 90-95%RH , 96hr	5PCS	Contact resistance : 30 mΩ(Max.)	3.60	3.20	3.40	/	OK	8
4.4 Temperature Cycle Test	Temperature : 1. -25℃ 30Min			3.90	3.60	3.76	/	OK	9
	2. 25℃ 15Min								
	3. 85℃ 30Min	5PCS	Contact resistance : 30 mΩ(Max.)						
	4. 25℃ 15Min								
	5 cycle								
4.5 Salt Spray Test	Temperature : 35℃ Density: 5% , 48hr	5PCS	Contact resistance : 30 mΩ(Max.)	4.20	3.60	3.92	/	OK	10
4.6 Solder ability	Temperature ：235 +/- 5℃	5PCS	90% coverage	OK	OK	OK	/	OK	11
	Dip Time： 2.5 +/- 0.5 sec								
	Requirement: 90 % COVERAGE								
4.7 Resistance to soldering heat	Temperature ： ≥260℃	5PCS	Contact resistance : 30 mΩ(Max.)	3.80	3.20	3.56	/	OK	11
	Dip Time ： 10 +/- 0.5 sec		Insertion and Withdrawal Force meet approved spec	2.30	2.10	2.20	/		
5. STRIFE TEST									
5.1 SOLDERING STRIFE Test	1. start temp: 260 ℃ / 10s, rise temp : 10 ℃/10s by step until part failure	5pcs	For reference.	285.00			/	OK	17-18
5.2 Endurance life test	1. soldering test, 2. Durability test 3. salt test	5pcs	For reference.	OK	OK	OK	/	OK	19-21

德力康电子科技有限公司

DLK ELECTRONICS TECHNOLOGY CO.,LTD

Construction & Dimension Test report

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 5PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test result: befor test											after test:								
No	Item	1#	2#	3#	4#	5#	Request	Min.	Max.	Average	1#	2#	3#	4#	5#	Request	Min.	Max.	Average
1	Pin electroplated thickness(μ″) Sn>100μ″	123.5	125.0	120.7	119.2	115.6		115.6	125.0	120.8									
2	Pin electroplated thickness(μ″) Ni>50μ″	90.2	91.5	93.8	89.5	98.5		89.5	98.5	92.7									
3	Pin electroplated thickness(μ″) Au>1μ″	3.47	3.12	4.77	3.69	3.36		3.12	4.77	3.68									
4	Shell electroplated thickness(μ″) Ni>80μ″	161.3	153.3	147.2	139.0	139.3		139.0	161.3	148.0									

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司
DLK ELECTRONICS TECHNOLOGY CO.,LTD
Electrical Characteristics test report

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 20PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: 电阻分选仪（2Y9622A）、兆欧表（ZC25B-3）、耐压测试仪（CS2672）
Test conditions: .Contact resistance(mΩ): 20mV/10mA ≤30mΩ; Insulation resistance(MΩ): DC 500V 1000MΩ Min.;
Withstand Voltagestrength (AC 500V for 1min.): 参照规格书，无异常 Approved Spec, No braekdown; Rated Current/Voltage: 3.0A 250V AC; There are no damage, Electrical performance Normal;

Test result: befor test

No	Item	1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	Min.	Max.	Average
		11#	12#	13#	14#	15#	16#	17#	18#	19#	20#			
1	Contact resistance(≤30mΩ)	3.30	3.40	3.20	3.30	3.20	3.40	3.30	3.50	3.70	3.50	3.20	3.80	3.49
		3.40	3.50	3.80	3.70	3.40	3.70	3.70	3.50	3.80	3.40			
2	Insulation resistance(5000MΩ Min.)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
3	Dielectric strength (AC 500V 1min)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
4	Rated Current/Voltage 3.0A 250V AC	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司
DLK ELECTRONICS TECHNOLOGY CO.,LTD
Electrical Characteristics test report

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 20PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: 电阻分选仪（2Y9622A）、兆欧表（ZC25B-3）、耐压测试仪（CS2672）
Test conditions: .Contact resistance(mΩ): 20mV/10mA ≤30mΩ; Insulation resistance(MΩ): DC500V 5000MΩ Min.;
Withstand Voltagestrength (AC 500V for 1min.): 参照规格书，无异常 Approved Spec, No braekdown; Rated Current/Voltage: 3.0A 250V AC;
There are no damage, Electrical performance Normal;

Test result: after test

No	Item	1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	Min.	Max.	Average
		11#	12#	13#	14#	15#	16#	17#	18#	19#	20#			
1	Contact resistance(≤30mΩ)	4.00	3.90	3.80	3.10	3.40	3.40	3.60	3.70	3.60	3.40	3.10	4.00	3.57
		3.80	3.70	3.40	3.50	3.20	3.30	3.40	3.80	3.90	3.50			
2	Insulation resistance(5000MΩ Min.)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
3	Dielectric strength (AC 500V 1min)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
4	Rated Current/Voltage 3.0A 250V AC	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司
DLK ELECTRONICS TECHNOLOGY CO.,LTD
Mechanical Characteristics test report

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 20PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: 插头plug、测力计Dynamometer（NK）、电阻分选仪（2Y9622A）
Test conditions: Insertion and Withdrawal Force: Pin Retention Force (≥1.0Kg/f); Terminal strength: No braekdown, Approved Spec; Durability: Mated and unmated 500 cycles , Contact resistance after test : 30 mΩ(Max.)

Test result: befor test

No	Item	1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	Min.	Max.	Average
		11#	12#	13#	14#	15#	16#	17#	18#	19#	20#			
1	Insertion Force (2.0-5.0Kg/f)	2.28	2.25	2.33	2.37	2.38	2.26	2.23	2.25	2.23	2.39	2.18	2.42	2.29
		2.42	2.28	2.19	2.25	2.34	2.27	2.18	2.27	2.29	2.33			
2	Withdrawal Force (1.00Kg/f Min)	1.13	1.28	1.34	1.35	1.37	1.36	1.32	1.31	1.34	1.25	1.13	1.39	1.31
		1.28	1.35	1.39	1.35	1.22	1.28	1.24	1.32	1.35	1.31			
3	Pin Retention Force (≥1.0Kg/f)	2.72	2.81	2.91	2.75	2.73	2.82	2.91	3.01	3.05	2.78	2.72	3.05	2.85
		2.88	2.82	2.93	2.78	2.79	2.84	2.83	2.85	2.92	2.91			
4	Terminal strength	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
5	Durability (Contact resistance ≤30mΩ)	3.40	3.50	4.10	3.80	3.90	4.10	3.90	3.70	3.60	3.50	3.40	4.10	3.75

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司
DLK ELECTRONICS TECHNOLOGY CO.,LTD
Mechanical Characteristics test report

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 20PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: 插头plug、测力计Dynamometer（NK）、电阻分选仪（2Y9622A）
Test conditions: Insertion and Withdrawal Force: Pin Retention Force (≥1.0Kg/f); Terminal strength: No braekdown, Approved Spec;
Durability: Mated and unmated 500 cycles , Contact resistance after test : 30 mΩ(Max.)

Test result: after test

No	Item	1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	Min.	Max.	Average
		11#	12#	13#	14#	15#	16#	17#	18#	19#	20#			
1	Insertion Force (2.0-5.0Kg/f)	2.18	2.15	2.23	2.27	2.28	2.16	2.23	2.23	2.12	2.29	2.12	2.29	2.19
		2.22	2.18	2.19	2.15	2.24	2.17	2.18	2.17	2.12	2.13			
2	Withdrawal Force (1.00Kg/f Min)	1.42	1.43	1.46	1.48	1.47	1.42	1.41	1.43	1.51	1.55	1.41	1.55	1.47
		1.43	1.51	1.52	1.54	1.53	1.48	1.49	1.43	1.41	1.42			
3	Pin Retention Force (≥1.0Kg/f)	2.35	2.36	2.49	2.64	2.45	2.62	2.52	2.53	2.51	2.22	2.22	2.64	2.45
		2.25	2.28	2.45	2.43	2.51	2.52	2.53	2.61	2.35	2.44			
4	Terminal strength	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
5	Durability (Contact resistance ≤30mΩ)	4.20	3.90	4.30	4.10	4.20	4.30	4.20	4.50	3.90	3.80	3.80	4.50	4.14

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司
DLK ELECTRONICS TECHNOLOGY CO.,LTD
Withstand Cold Test

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 5PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: 6DS-100temperature ant humidity ever-constant chamber
Test conditions Keep it in the temperature and humidity ever-constant chamber of -40℃±2℃, for 96 hours then take it out and remove the water drops then after placing it 1～2hours on the atmospheric conditions go to test. Contact resistance after test : 30 mΩ(Max.) .

Test result: befor test / after test

No	Item	1#	2#	3#	4#	5#		Min.	Max.	Average	1#	2#	3#	4#	5#		Min.	Max.	Average
1	Outward appearance	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
2	Insulation resistance(5000MΩ Min.)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
3	Dielectric strength (AC 500V 1min)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
4	Contact resistance(30mΩ)	3.20	3.50	3.10	3.40	3.60		3.10	3.60	3.36	3.50	3.40	3.80	3.90	3.60		3.40	3.90	3.64
5	Insertion Force (2.0-5.0Kg/f)	2.05	2.22	2.13	2.31	2.28		2.05	2.31	2.20	2.10	2.23	2.20	2.10	2.40		2.10	2.40	2.21
6	withdrawal Force (1.0Kg/f Min)	1.30	1.06	1.32	1.60	1.40		1.06	1.60	1.34	1.25	1.19	1.25	1.26	1.27		1.19	1.27	1.24

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司
DLK ELECTRONICS TECHNOLOGY CO.,LTD
Dry Heat Test

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 5PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: 6DS-100temperature ant humidity ever-constant chamber
Test conditions Keep it in the temperature and humidity ever-constant chamber of 70℃±2℃, for 96 hours then take it out and remove the water drops then after placing it 1～2hours on the atmospheric conditions go to test. Contact resistance after test : 30 mΩ(Max.)

Test result: befor test / after test

No	Item	1#	2#	3#	4#	5#		Min.	Max.	Average	1#	2#	3#	4#	5#		Min.	Max.	Average
1	Outward appearance	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
2	Insulation resistance(5000MΩ Min.)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
3	Dielectric strength (AC 500V 1min)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
4	Contact resistance(30mΩ)	3.30	3.40	3.20	3.30	3.20		3.20	3.40	3.28	4.10	3.60	3.80	4.10	3.40		3.40	4.10	3.80
5	Insertion Force (2.0-5.0Kg/f)	2.22	2.14	2.12	2.18	2.23		2.12	2.23	2.18	2.20	2.19	2.20	2.10	2.30		2.10	2.30	2.20
6	withdrawal Force (1.0Kg/f Min)	1.32	1.05	1.30	1.17	1.13		1.05	1.32	1.19	1.20	1.14	1.10	1.30	1.30		1.10	1.30	1.21

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司

DLK ELECTRONICS TECHNOLOGY CO.,LTD

Withstand Humidity Test

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 5PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: 6DS-100temperature ant humidity ever-constant chamber
Test conditions: Keep it in the temperature and humidity ever-constant chamber of 40±2℃, 90-95%RH for 96 hours then take it out and remove the water drops, then after placing it 1～2hours on the atmospheric conditions, go to test.Contact resistance after test : 30 mΩ(Max.)

Test result: befor test											after test								
No	Item	1#	2#	3#	4#	5#		Min.	Max.	Average	1#	2#	3#	4#	5#		Min.	Max.	Average
1	Outward appearance	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
2	Insulation resistance(5000MΩ Min.)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
3	Dielectric strength (AC 500V 1min)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
4	Contact resistance(30mΩ)	2.90	3.10	3.10	3.30	3.10		2.90	3.30	3.10	3.20	3.40	3.30	3.60	3.50		3.20	3.60	3.40
5	Insertion Force (2.0-5.0Kg/f)	2.16	2.03	2.08	2.21	2.19		2.03	2.21	2.13	2.10	2.08	2.10	2.20	2.20		2.08	2.20	2.14
6	withdrawal Force (1.0Kg/f Min)	1.26	1.06	1.32	1.17	1.13		1.06	1.32	1.19	1.20	1.18	1.30	1.10	1.20		1.10	1.30	1.20

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司

DLK ELECTRONICS TECHNOLOGY CO.,LTD

Temperature cyclic Test

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 5PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: temperature ant humidity ever-constant chamber
Test conditions:
5 cycles of following test. Keep it in the temperature 85±2℃ 30Min,
Keep it in the temperature -25±2℃ 30Min, ,
Conversion transition temperature25℃ time, 15Min。
After connector be left alone for 2 hours under the conditions of normal temperature and humidity, measure it.
Contact resistance after test : 30 mΩ(Max.).

Test result: / after test:

No	Item	1#	2#	3#	4#	5#		Min.	Max.	Average	1#	2#	3#	4#	5#		Min.	Max.	Average
1	Outward appearance	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
2	Insulation resistance(5000MΩ Min.)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
3	Dielectric strength (AC 500V 1min)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
4	Contact resistance(30mΩ)	3.10	3.50	3.20	3.10	3.30		3.10	3.50	3.24	3.80	3.70	3.90	3.60	3.80		3.60	3.90	3.76
5	Insertion Force (2.0-5.0Kg/f)	2.12	2.19	2.27	2.09	2.05		2.05	2.27	2.14	2.20	2.10	2.10	2.30	2.20		2.10	2.30	2.18
6	withdrawal Force (1.0Kg/f Min)	1.09	1.14	1.19	1.08	1.12		1.08	1.19	1.12	1.10	1.20	1.10	1.20	1.20		1.10	1.20	1.16

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司
DLK ELECTRONICS TECHNOLOGY CO.,LTD
Salt spray test report

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 5PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: Salt spray erode test box
Test conditions: Temperture: 35±2℃ Salt density: 5%
After keeping in above surrounding for 48hours,take it in the standard atmospheric condition, then remove the foreign matters adhered and measure, Contact resistance after test : 30 mΩ(Max.) 。

Test result: befor test / after test:

No	Item	1#	2#	3#	4#	5#		Min.	Max.	Average	1#	2#	3#	4#	5#		Min.	Max.	Average
1	Outward appearance	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
2	Insulation resistance(5000MΩ Min.)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
3	Dielectric strength (AC 500V 1min)	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
4	Contact resistance(30mΩ)	3.80	3.80	3.30	3.90	3.50		3.30	3.90	3.66	4.10	3.90	3.60	4.20	3.80		3.60	4.20	3.92
5	Insertion Force (2.0-5.0Kg/f)	2.19	2.10	2.13	2.13	2.24		2.10	2.24	2.16	2.20	2.22	2.30	2.20	2.10		2.10	2.30	2.20
6	withdrawal Force (1.0Kg/f Min)	1.09	1.15	1.09	1.16	1.24		1.09	1.24	1.15	1.20	1.14	1.20	1.20	1.20		1.14	1.20	1.19

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

德力康电子科技有限公司

DLK ELECTRONICS TECHNOLOGY CO.,LTD

Solder ability&Resistance to soldering heat Test report

Part Description : D-SUB R/A 12.5H CONN.	Part NO: DSB4WD-15LM1YN3PHF
Factory: DLK ELECTRONICS TECHNOLOGY CO.,LTD	Quantity: 5PCS
Test Date: 2015-01-16	Report Date: 2015-02-02

Test equipment: Thermostat tin furnace (TS-1500)、Life testing machine (CL-60-25)、
Test conditions: Solder-ability: 230±5℃ 2.5±0.5S ＞90%Composition of solder:96.5% Sn-3.0% Ag-0.5%Cu;
Solder heart resistance test: 260+2℃ 10±0.5S Obvious damage on appearance and Structure; Contact resistance after test : 30 mΩ(Max.)
Life test: , 100±50 cycles per minute Pin jack, 500 cycles without load;
Rating: 250V AC 3.0A;

Test result: befor test / after test:

No	Item	1#	2#	3#	4#	5#		Min.	Max.	Average	1#	2#	3#	4#	5#		Min.	Max.	Average
1	Solder-ability >90%	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
2	Solder heart resistance test (Contact resistance 30mΩ)	2.90	3.10	3.10	3.20	3.50		2.90	3.50	3.16	3.80	3.60	3.20	3.50	3.70		3.20	3.80	3.56
3	Life test (Contact resistance 30mΩ)	3.10	3.20	3.10	3.50	3.40		3.10	3.50	3.26	3.60	4.10	3.50	3.70	3.90		3.50	4.10	3.76
4	Rated Current/Voltage 3.0A 250V	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
5	Insertion Force (2.0-5.0Kg/f)	2.18	2.08	2.23	2.15	2.32		2.08	2.32	2.19	2.30	2.10	2.30	2.10	2.20		2.10	2.30	2.20
6	withdrawal Force (1.0Kg/f Min)	1.13	1.17	1.30	1.05	1.38		1.05	1.38	1.21	1.14	1.20	1.40	1.20	1.10		1.10	1.40	1.21

Conclusion: 合格

TEST	CHECK	Remarks
Tian tian	Li Xiaojun	

DLK ELECTRONICS TECHNOLOGY CO.,LTD

Construction & Dimension Test report

A/0 No.：12 of 12

Product Name：DSB4WD Model specifications:D-SUB-15PIN The number of samples：5Pcs

Acceptance time：■New mode ☐ Design changes ☐ Repair mode ☐ Product testing

Serial number	Sample No. / Serial number / Specifications(mm)	1	2	3	4	5	AVERAGE	Measurement Tools	Test results
1	7.90±0.13	7.91	7.95	7.94	7.92	7.93	7.93	A	OK
2	12.50±0.38	12.54	12.51	12.53	12.56	12.55	12.54	A	OK
3	30.80±0.38	30.81	30.82	30.86	30.84	30.87	30.84	A	OK
4	25.00±0.25	25.01	25.03	25.04	25.06	25.07	25.04	A	OK
5	16.33±0.25	16.31	16.32	16.33	16.30	16.35	16.32	A	OK
6	1.98±0.25	1.95	1.98	1.93	1.92	1.94	1.94	A	OK
7	1.98±0.25	1.96	1.92	1.94	1.96	1.91	1.94	A	OK
8	0.25±0.25	0.25	0.21	0.23	0.24	0.26	0.24	A	OK
9	0.90±0.25	0.91	0.92	0.94	0.97	0.93	0.93	A	OK
10	2.29±0.25	2.26	2.28	2.24	2.21	2.23	2.24	A	OK
11	3.70±0.25	3.71	3.72	3.74	3.76	3.73	3.73	A	OK
12	3.40±0.25	3.41	3.42	3.40	3.46	3.45	3.43	A	OK
13	2.29±0.25	2.29	2.21	2.25	2.24	2.27	2.25	A	OK
14	0.60±0.15	0.61	0.65	0.67	0.63	0.62	0.64	A	OK
15	5.00±0.38	5.01	5.03	5.06	5.04	5.08	5.04	A	OK
16	3.00±0.38	3.01	3.05	3.06	3.07	3.09	3.06	A	OK
17	0.30±0.15	0.34	0.31	0.35	0.32	0.36	0.34	A	OK
18	2.00±0.38	2.01	2.03	2.02	2.05	2.06	2.03	A	OK
19	2.00±0.38	2.03	2.04	2.06	2.05	2.02	2.04	A	OK
20	2.10±0.20	2.14	2.13	2.16	2.15	2.10	2.14	A	OK
21	6.00±0.25	6.01	6.03	6.05	6.04	6.08	6.04	A	OK
22	8.50±0.25	8.51	8.56	8.54	8.52	8.53	8.53	A	OK

Instrument code:A：projector（投影机）B：secondary element（二次元）C：vernier caliper（游标）

Remarks：

Test：Tian tian check: Li Xiaojun

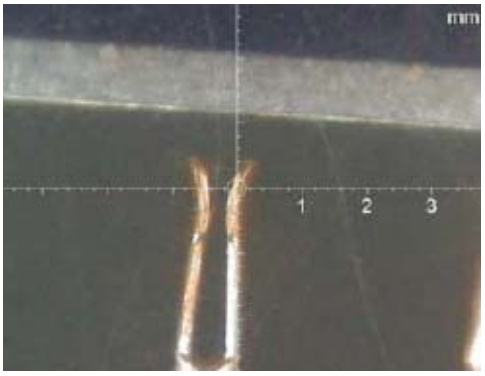
德力康电子科技有限公司
膜厚报告

Fischerscope　　XRAY XULM XYm

Product:　Au//Sn/Ni/CuZn　　申请单编号：

Application: Au/Sn/Ni/CuZn　　料号：D-SUB　端子

电镀规格：Au 1μ" Min　Sn 100μ" Min　Ni 50μ" Min



n=	1	Au 1 =	3.47 μ"	Ni 2 =	90.2 μ"
n=	2	Au 1 =	3.12 μ"	Ni 2 =	91.5 μ"
n=	3	Au 1 =	4.77 μ"	Ni 2 =	93.8 μ"
n=	4	Au 1 =	3.69 μ"	Ni 2 =	89.5 μ"
n=	5	Au 1 =	3.36 μ"	Ni 2 =	98.5 μ"

Mean	3.68 μ"	92.7 μ"
Standard deviation	0.642 μ"	13.9 μ"
C.O.V. (%)	17.44	11.16
Range	1.65 μ"	35.0 μ"
Number of readings	5	5
Min. reading	3.12μ"	89.5 μ"
Max. reading	4.77μ"	98.5 μ"
Measuring time	10 sec	
Measuring result	OK	
Measuring Date: 2014-02-10		

核准：李啸军　　审核：N/A　　Operator:　田甜

德力康电子科技有限公司

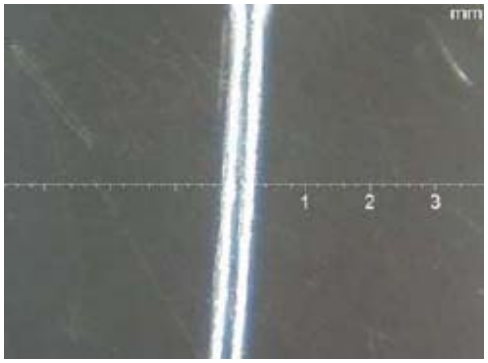
膜厚报告

Fischerscope　　XRAY XULM XYm

Product:　Sn/Ni/CuZn　　申请单编号：

Application: Sn/Ni/CuZn　　料号：D-SUB 端子

电镀规格：Sn 100μ" Min　Ni 50μ" Min



n=　1　Sn 1 =　123.5 μ"
n=　2　Sn 1 =　125.0 μ"
n=　3　Sn 1 =　120.7 μ"
n=　4　Sn 1 =　119.2 μ"
n=　5　Sn 1 =　115.6 μ"

Mean	120.8 μ"
Standard deviation	3.715 μ"
C.O.V. (%)	1.68
Range	9.45 μ"
Number of readings	5
Min. reading	115.6 μ"
Max. reading	125.0 μ"
Measuring time	10 sec
Measuring result	OK
Measuring Date:	2014-02-10

核准：李啸军　　审核：N/A　　Operator:　田甜

德力康电子科技有限公司

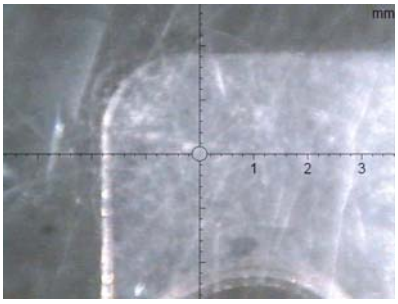
膜厚报告

Fischerscope XRAY XULM XYm

Product: Ni/CuFe 申请单编号：

Application: Ni/CuFe 料号：**D-SUB** 外壳

电镀规格：Ni:80 μ" Min



n= 1 Ni 1 = 161.3 μ"
n= 2 Ni 1 = 153.3μ"
n= 3 Ni 1 = 147.2 μ"
n= 4 Ni 1 = 139.0 μ"
n= 5 Ni 1 = 139.3μ"

Mean	148.0μ"
Standard deviation	9.537 μ"
C.O.V. (%)	6.44
Range	22.3 μ"
Number of readings	5
Min. reading	139.0μ"
Max. reading	161.3μ"
Measuring time	10 sec
Measuring result	**OK**

Measuring Date: 2014-02-10

核准：李啸军 **审核**：N/A Operator: 田甜

MSDS 材料安全说明书
PBT T301 G30 VO BL-HF

1.Substance/preparation and company identification (样品准备与公司标识)

Company（公司）

TAISU PLASTIFICATION COMPANY
TAISU INDUSTRIAL ZONE FENGXIN ROAD(LOUCUN NIUGEN AO
GUANGMING NEW DISTRICT SHENZHEN CHINA
深圳市泰塑塑化材料科技有限公司

Contact us（联系方式）

Tel(电话): +86 0755-29625958
Fax（传真）: +86 0755-29625758

Molecular formula（分子式）: **(C12 H12 O4)n**
Synonyms（又名）: **polybutylene terephthalate (PBT)**

2.Composition/information on ingredients（产品成分）

CAS Number	Content (含量)%	Chemical name（化学名称）
25971-63-5	≥50.0%	polybutylene terephthalate(PBT)
191565	≤20.0%	N-P Compound Flame Retardant
2082-79-3	≤30.0%	glass fiber,oxide，chemicals

3.Hazard identification（ 危害辨识）

Emergency overview(紧急情况概览)

Caution(警告)： May cause eye,skin and respiratory tract irritation.
可能会造成眼睛、皮肤和呼吸道的损害。
Avoid contact with the skin,eyes and clothing
避免与皮肤、眼睛和衣物接触。
Avoid inhalation of dusts/mists/vapours.
避免吸入灰尘、迷雾和蒸汽。
Use with local exhaust ventilation.
在有通气排风的环境中使用。
Wear chemical resistant protective gloves.
佩戴具有抗化学保护功能的手套。
Eye wash fountains and safety showers must be easily accessible
附近必须有喷水洗眼器和安全淋浴室。

Primary routes of exposure(主要侵入途径)：

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases

该物质可能通过与眼睛皮肤接触、摄入或吸入侵害人体。也可能通过气体的途径侵害眼睛或被人体吸入。液化后的气体也能够通过皮肤侵入人体。

Acute toxicity(急性毒性)

Contact with molten product may cause thermal burns.

与融化的物质接触可能导致燃烧。

4.First-aid measures(急救方法)

Inhaled(吸入)

Remove the affected individual into fresh air and keep the person calm. Assiat in breathing if necessary. Immediate medical attention required if there are visible signs of phosphine.

把伤者移到有新鲜空气的地方同时保持伤者处于冷静状态。如果有必要可以做人工呼吸。如果发现有磷暴露在外应该采取必要的医疗措施。

On skin(接触皮肤)：

Burns caused by molten material require hospital treatment.

融化的物质造成的烧伤需要立即就医。

In eyes(侵入眼睛):

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water.

如果与眼睛接触应立即用大量的水冲洗15分钟。如果仍然有侵蚀的感觉应立即就医。

If swallowed(吞食):

Ingestion is not likely in the available physical form. If ingested,seek medical attention.

如果吞食该物质请立即就医。

5.Handling and storage(操作与储存)

Handling(操作)

General advice(一般性建议):

Provide suitable exhaust ventilation at drying process and in the surrounding of the melt outlet of processing machines. Closed containers should only be opened in well-ventilated areas. Ensure thorough ventilation of stores and work areas.

要在通风的环境下进行干燥和挤出注塑。密封的容器只有在良好通风的环境下才可以被打开。

Protection against fire and explosion(防火措施)：

Take precautionary measures against static discharges.

Handling of hot melt may produce small flame-up conditions. Hot melt should be placed in cool water immediately if flame-up occurs.

要对静电采取预防措施。高温熔体可能会出现小的火焰，这种情况下应立即将燃烧的熔体置入冷水当中。

Storage(储存)

Keep container tightly closed. Protect against moisture

保持容器的干燥，起到防潮作用。

6.Physical and chemical properties(材料的物理化学性质)

Form(形状):	granules（颗粒状）
Odour（气味）:	odourless（无味）
Colour（颜色）:	blue（蓝色）
PH value（PH值）	No data available
Melt range（熔点）	225℃
Density（密度）:	1.35-1.45g/cm^3

7.Stability and reactivity （材料的稳定性与反应性）

Decomposition products(分解物质)：

Hazardous decomposition products:carbon monoxide

有害分解物质：一氧化碳

Thermal decomposition(热分解)：

＞310℃　To avoid thermal decomposition, do not overheat.

＞310℃　为了避免热分解请尽量不要过度加热。

8.Toxicological information（毒性资料）

Chronic toxicity(长期毒性)：

Other information(其它信息)：

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

基于我们的经验和获得的信息，如果按照上面提及的方法操作，本产品不会对人体照成任何不良损害。

9.Ecological information(生态学资料)

Biodegradation(生物降解性)：

Experience shows this product to be inert and non-degradable.

经验表明该产品在环境中是惰性的，不会发生降解。

Bioaccumulation(生物富集)：

The product will not be readily bioavaliable due to its consistency and insolubility in water.
由于它良好的一致性和不溶于水的性质，该产品不会轻易被生物体吸收。

10.Disposal considerations(处理建议)

Waste disposal of substance(废弃物的处理):

Check for possible recycling. Dispose of inaccordance with national, state and local regulations
按照国家、省或地区的法律法规进行处理。

Container disposal(包装处理) :

Packs must be completely emptied.Completely emptied packagings can be given for recycling
包装袋必须被全部清空，清空的包装袋可以进行回收再利用。

11.Transport information

Land transport: Not classified as a dangerous good under transport regulations.
Sea transport: Not classified as a dangerous good under transport regulations.
Air transport: Not classified as a dangerous good under transport regulations.

12.Fire-fighting measures

Flash point:	＞400℃	闪点：	＞400℃
Autoignition:	＞350℃	自燃：	＞350℃

Suitable extinguishing media(合适的灭火介质)：

water, foam, dry extinguishing media　　水、泡沫、干粉灭火器

13.Accidental release measures

Environmental precautions(环境保护):

This product is not regulated by RCRA. This product is not regulated by CERCLA.
这个产品受RCRA的管制，不受CERCLA的管制。

Cleanup(清理)：

Pick up with suitable appliance and diapose of.
经过合适的处理可以进行回收再利用。

Futher information(更多信息)：

High risk of slipping due to leakage/spilage of product.
产品有会因为泄露而照成滑移的风险。

14.Exposure controls and personal protection(接触控制和个人防护)

Components with workplace control parameters(工作场所各物质含量控制)

phosphorus	PEL 0.1 mg/m^3
oxide,chemicals	TWA 5 mg/m^3

Hand protection(手部防护):

Chemical resistant protective gloves.
佩戴具有化学防护功能的手套。

Eye protection(眼镜防护):

Tightly fitting safety goggles(chemical goggles)
佩戴紧密配合的护目镜。

Body protection(身体防护):

Body protection must be chosen based on level of activity and exposure.
身体保护装置的选择基于接触的程度和物质的活性。

General safety and hygiene measures(一般安全卫生方法):

Do not inhale gases/vapours/aerosols. Wash soiled clothing immediately.
不要吸入气体/蒸汽/悬浮颗粒。及时清洗穿脏的衣服。

15.Safety rules number(安规档案号)

UL E321019

16.Other information(其它信息)

HMIS Ⅲ rating

Health:	3	Flammability:	1	Physical hazard:	0

HMIS uses a numbering scale ranging from 0-4 to indicate the degree of hazard.A value of 0 means that the substance possesses essentially no hazard;a rating of 4 indicates high hazard.
危害物质鉴别系统(HMIS)用数字0-4表征危害程度，0表示无危害，4表示危害程度高。

Important: While the descriptions,designs,data and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use.

重要：这里所提供的所有数据、描述和信息都有很高的可信度和准确性，但是这只能够作为生产指导使用。因为有许多因素会影响加工和应用，我们建议您进行测试后再决定该产品是否能达到您的使用要求。

MSDS 材料安全说明书
PBT T301 G30 VO BK-HF

1.Substance/preparation and company identification (样品准备与公司标识)

Company（公司）

TAISU PLASTIFICATION COMPANY
TAISU INDUSTRIAL ZONE FENGXIN ROAD(LOUCUN NIUGEN AC
GUANGMING NEW DISTRICT SHENZHEN CHINA
深圳市泰塑塑化材料科技有限公司

Contact us（联系方式）

Tel(电话): +86 0755-29625958
Fax（传真）: +86 0755-29625758

Molecular formula（分子式）: **(C12 H12 O4)n**
Synonyms（又名）: **polybutylene terephthalate (PBT)**

2.Composition/information on ingredients（产品成分）

CAS Number	Content (含量)%	Chemical name（化学名称）
25971-63-5	≥50.0%	polybutylene terephthalate(PBT)
191565	≤20.0%	N-P Compound Flame Retardant
2082-79-3	≤30.0%	glass fiber,oxide，chemicals

3.Hazard identification（ 危害辨识）

Emergency overview(紧急情况概览)

Caution(警告): May cause eye,skin and respiratory tract irritation.
可能会造成眼睛、皮肤和呼吸道的损害。
Avoid contact with the skin,eyes and clothing
避免与皮肤、眼睛和衣物接触。
Avoid inhalation of dusts/mists/vapours.
避免吸入灰尘、迷雾和蒸汽。
Use with local exhaust ventilation.
在有通气排风的环境中使用。
Wear chemical resistant protective gloves.
佩戴具有抗化学保护功能的手套。
Eye wash fountains and safety showers must be easily accessible
附近必须有喷水洗眼器和安全淋浴室。

Primary routes of exposure(主要侵入途径)：

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases

该物质可能通过与眼睛皮肤接触、摄入或吸入侵害人体。也可能通过气体的途径侵害眼睛或被人体吸入。液化后的气体也能够通过皮肤侵入人体。

Acute toxicity(急性毒性)

Contact with molten product may cause thermal burns.
与融化的物质接触可能导致燃烧。

4.First-aid measures(急救方法)

Inhaled(吸入)

Remove the affected individual into fresh air and keep the person calm. Assiat in breathing if necessary. Immediate medical attention required if there are visible signs of phosphine.
把伤者移到有新鲜空气的地方同时保持伤者处于冷静状态。如果有必要可以做人工呼吸。如果发现有磷暴露在外应该采取必要的医疗措施。

On skin(接触皮肤)：

Burns caused by molten material require hospital treatment.
融化的物质造成的烧伤需要立即就医。

In eyes(侵入眼睛):

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water.
如果与眼睛接触应立即用大量的水冲洗15分钟。如果仍然有侵蚀的感觉应立即就医。

If swallowed(吞食):

Ingestion is not likely in the available physical form. If ingested,seek medical attention.
如果吞食该物质请立即就医。

5.Handling and storage(操作与储存)

Handling(操作)

General advice(一般性建议):

Provide suitable exhaust ventilation at drying process and in the surrounding of the melt outlet of processing machines. Closed containers should only be opened in well-ventilated areas. Ensure thorough ventilation of stores and work areas.
要在通风的环境下进行干燥和挤出注塑。密封的容器只有在良好通风的环境下才可以被打开。

Protection against fire and explosion(防火措施)：

Take precautionary measures against static discharges.

Handling of hot melt may produce small flame-up conditions. Hot melt should be placed in cool water immediately if flame-up occurs.

要对静电采取预防措施。高温熔体可能会出现小的火焰，这种情况下应立即将燃烧的熔体置入冷水当中。

Storage(储存)

Keep container tightly closed. Protect against moisture

保持容器的干燥，起到防潮作用。

6.Physical and chemical properties(材料的物理化学性质)

Form(形状):	granules（颗粒状）
Odour（气味）:	odourless（无味）
Colour（颜色）:	black（黑色）
PH value（PH值）	No data available
Melt range（熔点）	225℃
Density（密度）：	1.35-1.45g/cm^3

7.Stability and reactivity （材料的稳定性与反应性）

Decomposition products(分解物质)：

Hazardous decomposition products:carbon monoxide

有害分解物质：一氧化碳

Thermal decomposition(热分解)：

＞310℃ To avoid thermal decomposition, do not overheat.

＞310℃ 为了避免热分解请尽量不要过度加热。

8.Toxicological information（毒性资料）

Chronic toxicity(长期毒性)：

Other information(其它信息)：

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

基于我们的经验和获得的信息，如果按照上面提及的方法操作，本产品不会对人体照成任何不良损害。

9.Ecological information(生态学资料)

Biodegradation(生物降解性)：

Experience shows this product to be inert and non-degradable.

经验表明该产品在环境中是惰性的，不会发生降解。

Bioaccumulation(生物富集)：

The product will not be readily bioavaliable due to its consistency and insolubility in water.
由于它良好的一致性和不溶于水的性质，该产品不会轻易被生物体吸收。

10.Disposal considerations(处理建议)

Waste disposal of substance(废弃物的处理):

Check for possible recycling. Dispose of inaccordance with national, state and local regulations
按照国家、省或地区的法律法规进行处理。

Container disposal(包装处理) :

Packs must be completely emptied.Completely emptied packagings can be given for recycling.
包装袋必须被全部清空，清空的包装袋可以进行回收再利用。

11.Transport information

Land transport: Not classified as a dangerous good under transport regulations.
Sea transport: Not classified as a dangerous good under transport regulations.
Air transport: Not classified as a dangerous good under transport regulations.

12.Fire-fighting measures

Flash point:	＞400℃	闪点：	＞400℃
Autoignition:	＞350℃	自燃：	＞350℃

Suitable extinguishing media(合适的灭火介质)：

water, foam, dry extinguishing media　　水、泡沫、干粉灭火器

13.Accidental release measures

Environmental precautions(环境保护):

This product is not regulated by RCRA. This product is not regulated by CERCLA.
这个产品受RCRA的管制，不受CERCLA的管制。

Cleanup(清理)：

Pick up with suitable appliance and diapose of.
经过合适的处理可以进行回收再利用。

Futher information(更多信息)：

High risk of slipping due to leakage/spilage of product.
产品有会因为泄露而照成滑移的风险。

14.Exposure controls and personal protection(接触控制和个人防护)

Components with workplace control parameters(工作场所各物质含量控制)

phosphorus	PEL 0.1 mg/m^3
oxide,chemicals	TWA 5 mg/m^3

Hand protection(手部防护):

Chemical resistant protective gloves.
佩戴具有化学防护功能的手套。

Eye protection(眼镜防护):

Tightly fitting safety goggles(chemical goggles)
佩戴紧密配合的护目镜。

Body protection(身体防护):

Body protection must be chosen based on level of activity and exposure.
身体保护装置的选择基于接触的程度和物质的活性。

General safety and hygiene measures(一般安全卫生方法):

Do not inhale gases/vapours/aerosols. Wash soiled clothing immediately.
不要吸入气体/蒸汽/悬浮颗粒。及时清洗穿脏的衣服。

15.Safety rules number(安规档案号)

UL E321019

16.Other information(其它信息)

HMIS Ⅲ rating

Health:	3	Flammability:	1	Physical hazard:	0

HMIS uses a numbering scale ranging from 0-4 to indicate the degree of hazard.A value of 0 means that the substance possesses essentially no hazard;a rating of 4 indicates high hazard.
危害物质鉴别系统(HMIS)用数字0-4表征危害程度，0表示无危害，4表示危害程度高。

Important: While the descriptions,designs,data and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use.

重要：这里所提供的所有数据、描述和信息都有很高的可信度和准确性，但是这只能够作为生产指导使用。因为有许多因素会影响加工和应用，我们建议您进行测试后再决定该产品是否能达到您的使用要求。

No:GT-JZ-MSDS-1

广 州 铜 材 厂 有 限 公 司

物 质 安 全 资 料 表(MSDS)

一、物质与厂商资料：

物质名称：H65、H62、H70、H90 黄铜带
物质编号：各规格均适用。
供应商名称：广州铜材有限公司
供应商地址：广州从化市经济技术开发区（太平镇）
联系电话： 020-87810373 传真：020-87819853

二、成份辩识资料：

危害物质成份：成品及原料（阴极铜、锌锭）检测 Pb、Cd、Hg、Cr6 + 含量分别不大于 100PPm、5 PPm、2PPm、2PPm，不含有 PPB PBDE，其它环境管理物质保证符合欧盟 RoHS 或 SONY“SS-00259”管理规范的要求。

三、危害辩识资料：

健康危害效应：无，不可食用
环境影响：无，可出售或回收再利用
物理性及化学性危害：常温下性质稳定，不易燃。板、带状态时材料边缘较锋利，须注意刮伤。
特殊危害：无

四、急救措施：

皮肤接触：因对人体无直接伤害，故不需特别急救措施。

五、灭火措施：

适用灭火剂：二氧化碳、干粉。
灭火时可能遭遇之特殊危害：无

六、泄露处理方法：

注意事项：无泄露之危险。

七、安全处置与储存方法：

处置方法：避免储存于高温、潮湿及酸性环境中。
储存方法：应储存于常温（25℃）及干燥（相对湿度在 75℃％左右）环境中。

八、暴露预防措施：

工程控制：避免受水、腐蚀物质等的影响
控制参数：无
个人防护设备：戴手套
卫生措施：密封包装，不能乱丢

九、物理及化学性质：

物质状态：常温、常压下固体，青黄色泽
化学性质：常温、常压下性质稳定，避免接触强酸、强碱及水

十、安全性及反应性：

安全性：置于低温干燥处，三个月内（以出货日期）不会发生品质变异，如长期储存，应避免包装破损。

特殊状况下可能之危害反应：搬运宜小心轻放，避免压伤，或损坏产品影响质量。

应避免之状况：避免储存于高温，潮湿及酸性环境中。

应避免之物质：水、酸碱、强氧化剂。

十一、毒性物质：

急毒性：无　　致敏感应：无

局部效应：无　　慢毒性或长期性：无

特殊效应：无

十二、生态资料：

可能之环境影响：为可再生资源。

十三、废弃物处置方法：

处置：回收再利用

十四、运送资料：

国际运送规定；无　　国内运送规定：无

特殊运送方法及注意事项：采取妥善包装方式，避免运送途中发生倒塌变形。

十五、法规资料：

适用法规：RoHS 或 SONY SS-00259 相关规则

劳工安全卫生设施规则

危险物及有害物适用规则

十六、其它资料：

参考文献：GB/T2059-2008

GB/T5231-2001

MATERIAL SAFETY DATA SHEET(物质安全数据表)

一、物料与供货商资料：

物品名称：螺丝、铆钉铜材	
物品代码：C3771　C3602	
化学名称：Cu-Sn-Zn 金属合金	
类　　别：金属混合物	
供商名称：慈溪市骅杰电子有限公司	
供商地址：浙江省慈溪市慈东工业园区 B74	
联络电话：0574-63215395	传真：0574-63215396
供商网址：www.huajie.cc	
紧急联络电话：0769-85429395	

二、物质构成成份：

化学名称	铜（Cu）
CAS 编号	7440-50-8
比例	C3771（Cu+Sn+Zn）>99.5% C3602（Cu+Sn+Zn）>99.7%

化学名称	锡（Sn）
CAS 编号	7440-31-5
比例	C3771 5.5-7.0% C3602 7.0-9.0%

化学名称	锌（Zn）
CAS 编号	
比例	

OHSA：本产品在固体时不具危险性。其粉尘及烟雾：具有危险性。

三、危害识别数据：

警告：

长时间暴露粉尘及烟雾的工作环境下，对于眼睛、呼吸系统、皮肤会造成刺激伤害，必须配戴保护器具，包括护目镜，适当衣物，必须要保护全部身体，身体被接触部位，必须彻底清洗干净。

种类的名称	铜、锡、锌之混合物
危险标示类别	金属粉尘或烟雾对皮肤、眼睛造成刺激性且对肺部有毒性，但金属成品本身不具危害性。
危险系数（粉尘及烟雾）	健康：1；可燃：0〈0=低、4=极高〉

四、急救措施：

对于粉尘及烟雾危害：

眼睛接触	以大量清净水冲洗上下眼皮内部（至少 15 分钟），若眼睛被刺激不适者，立即送医院检查。
食入时	大量喝水并催吐，迅速送医院检查

皮肤接触	以清水清洗干净
吸入时	送至通风良好较阴凉处休息，以毛布保暖，严重者迅速送医院检查诊断。

五、火灾及爆炸危害资料：

燃烧性资料：

爆炸性	无
可燃性	无
燃烧性	无
闪火点	不适用
自燃性	不适用

灭火剂：

灭火方式：使用灭火剂于材料表面即可

消防建议：

注意粉尘可能导致爆炸或产生可燃能气体

六、泄漏的处置：

本产品在加工时产生粉尘时，有可能产生爆炸，必须将火源移除，也唯有粉尘型态时才可能产生泄露，所以必须装设吸尘装备，过滤空气中之粉尘，以降低其粉尘浓度。	
泄露于空气中	不适用
泄露于水中	不适用
泄露于地面中	不适用

七、处置和储藏：

处置：操作处所需整理整顿，干燥通风，以避免灰尘、潮湿
储藏：避免放置于潮湿或酸性物质或酸性气体之场所

八、预防措施：

个人防护设备：工作制服 呼吸保护：口罩 手部保护：防护手套 眼部保护：配戴防护目镜 皮肤和身体：工作制服
卫生措施：1、工作场所严禁吸烟或饮食 2、处理本物质后须彻底洗手 3、维持工业场所清洁

深圳市德力泰电子有限公司 工程部 2009.9.25 承认章

深圳市德力泰电子有限公司 工程部 2009.8.11 图纸发行章

九、物理和化学属性：

外观	浅黄色光泽的固体金属
熔点	1000-1075℃
沸点	无资料
比重	8.9
蒸气压	不适用
溶解度	不适用
PH 值 25℃	不适用

十、安全性和反应性：

非活性物质

十一、毒性信息：

严重毒物：无
局部影响：无
致过敏性：无
持续长期：无
特定影响：无

十二、生态信息：

本产品的成品对生态不具毒性：

分解性：无资料
突变性：本产品没资料显示会造成突变性
鱼毒性：水中的铜溶度，在 0.015-3.0mg/1,尤其中软水中,会有报告会对许多种类的鱼、贝壳类的动物及软体动物、浮游生物具有毒性。

十三、废弃处理：

本产品不属于危害性废弃物，须丢弃时可以委托回收商予以回收再生处理。

十四、运输资料：

运送时本产品不要直接与水接触，并且要注意会有掉落危险存在。

十五、法规资料：

通常无特定法令规定，但是在会产生粉尘的场所必须遵守劳工安全卫生法劳工作业环境空气中有害物质容许浓度标准。

十六、其它资讯：

本 MSDS 内容资料应被所有使用、运输、储存或使用本产品之公司/人员充分了解与接受，并其应用使用、加工、制程式管理与本产品有关之作业规定上，本 MSDS 资料内容在编订时尽可能将最新资料纳入。

工程部
2009.8.11
图纸发行章

工程部
2009.9.25
承认章

材料安全数据表

Material Safety Data sheet

DEFmsds-SPCC　　2013-3-22

产品名称

产品名称　冷轧钢带

厂商资料

制造商---公司与地址

上海德分电子材料有限公司

Shanghai DEF Electronic Material Co., Ltd

上海市宝山区潘泾路 858 号　　邮编：201906

NO 858.Panjing Road, Baoshan District,Shanghai　201906

联系电话：（021）36381755

传　　真：（021）5852 8771

网　　址：www.sh-def.com

一、成分资料

化学成分（%）：						
分析元素	C	Si	Mn	S	P	Fe
分析数据	0.03	TR	0.19	0.012	0.018	99.783

二、潜在威胁

--- 若服食刺激口腔和胃，可能有害

--- 若吸入金属粉尘对咽喉有刺激性，将导致上呼吸道过敏

--- 若吸入金属烟雾将导致发烧发热症状

--- 若接触皮肤将导致皮肤疼痛，以及手足角质化

--- 固态不易燃烧，液态金属遇水反应强烈

三、紧急措施

--- 吸入：迅速脱离现场至空气新鲜处，保持呼吸道通畅，如呼吸困难，立即输氧，必要时立即寻求医疗援助

--- 皮肤接触：立即清除附着粉尘，用肥皂水喝清水彻底冲洗皮肤，必要时立即寻求医疗援助

--- 眼睛接触：立即将手洗净后提起眼睑，用流动清水或生理盐水冲洗，必要时立即寻求医疗援助

四、染暴性与消防

--- 燃爆上限：无资料

--- 危险特性：遇明火、高热可燃

--- 灭火方法：采用雾状水、泡沫、干粉、二氧化碳、砂土灭火

昆山德力康电子科技有限公司 KUNSHAN DEK ELECTRONICS TECHNOLOGY CO.,LTD 研发部 2013.05.31 承认章

五、泄漏应急处理

--- 迅速撤离泄漏污染区人员至安全区，并进行隔离，严格限制出入

--- 切断火源，建议应急处理人员戴自给正式呼吸器。不直接接触泄漏物，尽可能切断泄漏源

--- 用真空吸尘器吸除，用吸湿器除去空气中的粉尘。

--- 若液体防止流入下水道排洪沟等限制性空间。也可用大量水冲洗，洗水稀释后放入废水系统

六、处理与储存

--- 该产品只供工业使用，储存于干燥且恒温的仓储环境。注意不应与不相容物质一起存放。

七、防护措施

--- 中国 MAC：未制定标准

--- 检测方法：

--- 工程控制：提供充分的排风，加强通风，提供安全淋浴和洗眼设备

--- 呼吸系统防护：空气浓度超标时，应佩戴过滤式防毒面具（半面罩），紧急事态抢救或撤离时，建议佩戴空气呼吸器

--- 眼睛防护：佩戴化学安全防护眼镜

--- 身体防护：穿戴防护工作服

--- 手防护：戴防护手套

--- 其他防护：工作现场禁止吸烟、进食、饮水。工作完毕立即彻底清洗。工作服不准带至非作业场所，须单独存放洗后备用。保持良好的卫生习惯。

八、稳定性与反应活性

稳定性	稳定
有害聚合	不会发生
该避免情况	储存时潮湿
性质相反	强酸和碱

九、有害物质测试

--- 测试方法：金属离子（原子离子发射光谱仪），有机离子（电子显微镜）

--- 测试结果：产品成分中不含有害物质，详见附表一

十、毒理学资料

--- 急性毒性：无

--- 刺激性：金属粉尘刺激口腔、鼻、咽喉

--- 亚急性和慢性毒性：无

--- 致癌性：无



十一、废弃处理

--- 处置前应参阅国家和地方有关法规

十二、环境资料

--- 环境资料

十三、包装与运输

--- 须密封包装

--- 严禁与易燃物或可燃物、酸类、食用化学品等混装混运

--- 避免潮湿，导致腐蚀

十四、法规信息

--- 一般无特定法规

--- 须注意在生产加工的场所要遵守相关的劳动法规以及行业安全操作程序

十五、其它信息

--- 此材料安全数据内容应用于所有使用本产品的公司

--- 此材料安全数据内容已将最新数据更新输入，但不对所有内容予以保证





上海德分电子材料有限公司

质量部　孙珂

苏州长风镀饰有限公司

物质安全资料表

1. 产品与公司辨识

化学品俗名或商品名： 氨基磺酸镍镀液

企业名称

无锡市力桥贸易有限公司
无锡市梅村工业园新锡路223号
电话号码：86-0510—85308628

企业应急电话

TEL：86-0510—85308628
FAX：86-0510-85308728

2. 成分/组成信息

该产品是化学混合物

主要成分	CAS NO.	含量	分类
氨基磺酸镍	13770-89-3	50%	无
氯化镍	7791-20-0	0.1%	无
硼酸	10043-35-3	0.4%	无

3. 危害辨识

会引起视力受损，水雾可引起肺部伤害；
高浓度时对水中生物有害；
不易燃烧，有腐蚀性。

根据法规的标准，被列为有害品。



4. 急救措施

吸 入 ： 自暴露区移开。 如果呼吸困难，请给予氧气。 如果症状持续不退，请就医。

皮肤接触： 用清水持续洗涤至少15分钟。 如果出现起泡或发红不退，请就医。 衣服再次使用前要洗涤。

眼睛接触： 立刻大量用水冲洗眼睛至少15分钟，睁开眼睛。 如果疼痛或发红不退，请就医。

食 入： 用水漱口。 让受害者饮用1—3杯水，稀释胃中之物。 需要及时就医，如果受害者正失去意识、已失去意识或抽搐，切勿经口服用任何东西。

给医治人员的提示

修定日期: 07.20.2011

对症处置。

5. 消防措施

灭火方法及灭火剂： 使用洒水、泡沫、干粉或二氧化碳。

救火时的特殊危险性： 本产品不会燃烧，但会与某些物质反应。

消防人员的特殊保护设备： 穿着全防护衣服及自给式空气呼吸装置。

进一步的信息： 无。

6. 泄露应急处理

个人的预防措施
穿着适当的防护服。
戴呼吸罩.

环境预防措施
防止物质进入排水沟或水道。
如果溢出物进入水道或者下水道、或者污染土壤或植被时，请通知政府管理部门。

消除方法
用吸收剂覆盖或遏制。收集并处理。

7. 操作处置与储存

操作
必须保证相关设备抽风良好. 避免呼吸蒸气。 避免接触眼睛、皮肤和衣服。 操作中应尽量不沾及镀液。
有关贮存的进一步的信息： 做好个人卫生以预防意外暴露。

储存
储存条件： 存放在镀槽或药水桶中. 储存区域应该是：凉爽干燥通风良好切勿阳光直射远离不相容物质

8. 接触控制/个体防护

暴露极限

如果有暴露极限，则列在下面。

接触控制，个人保护

眼睛防护： 护目镜

修定日期： 07.20.2011

手防护： 氯丁二烯手套。其它贵公司安全专业人员所建议之耐化学药品手套。 如果出现退化或化学渗透迹象，手套必须立刻脱下更换。

身体防护： 正常工作服。

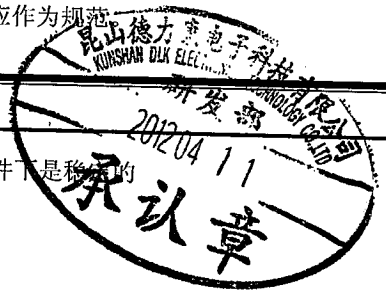
呼吸系统防护： 如果有暴露在高浓度蒸气下的危险，请使用呼吸保护。 所选定之特定呼吸防护具必须以工作场所发现的化学物质气体浓度为基础，且不得超过呼吸防护具的工作极限。

工程控制 ： 最好使用工程方法对暴露进行预防或控制。方法包括工序或人员封闭、机械通风（局部排气）以及控制工序条件。

9. 理化特性

物理状态	液体
颜色	绿色
气味	酸味
PH值	3.8～4.2
沸点/沸程	-----
闪点	----
饱和蒸气压	-----
相对蒸汽密度	------
水溶性	溶解
相对密度	1.1～1.30
蒸发速率	------
挥发性有机物的	0 g/l

请注意：上述物理数据为典型值，不应作为规范。



10. 稳定性和反应活性

危险反应	在正常条件下是稳定的
避免接触的条件	高温.
禁配物	氰化物
危险的分解产物	氨气

11. 毒理学资料

急性中毒：

1、 吸入：会刺激鼻、咽及肺；
2、 眼睛：受损程度和浓度有关，严重会产生发红、视力下降；
3、 食入：会引起呕吐、腹泻、及虚脱。

修定日期： 07.20.2011

慢性或长期毒性　　会引起皮肤干燥，发炎

12. 生态学资料

与水互溶，排到土中会被植物吸收，导至发黄

13. 废弃处置

环境预防措施： 防止物质进入排水沟或水道，高浓度对植物及水中生物有害。
如果溢出物进入水道或者下水道、或者污染土壤或植被时，请通知政府管理部门。

处理
根据当地、州（省）、联邦所有法规进行处理。
空容器可能含有有害残余物。 此物质及其容器必须以安全方法弃置。 容器彻底清洗以前，不要撕掉标签。

14. 运输信息

公路和铁路运输的等级。

不受现有危险品相关法规的控制

海运分类(IMO-IMDG)：

Not regulated (Not dangerous for transport)

空运分类(IATA/ICAO)：

Not regulated (Not dangerous for transport)

运输分类可能会因容器的体积和国家或地区的法规而有所不同。

15. 法规信息

标签
分类和标签已经依照法规完成。

危险符号和危险指示
C　　有腐蚀性
含有：镍化合物及有机物

R类短语

修定日期：　07.20.2011

R22	误吞对人体有害。
R43	接触皮肤可引起过敏。

S类短语

S24	避免沾及皮肤。
S37	戴上适当的手套。
S60	此物质及其容器必须作为有害废物处理。

16. 其他信息

第二部分中列出的R类短语的全文

R36	对眼睛有刺激。
R43	接触皮肤可引起过敏。



苏州长风镀饰有限公司

物 质 安 全 资 料 表

1. 产品与公司辨识

化学品俗名或商品名： **纯锡镀液**

企业名称

罗门哈斯电子材料（东莞）有限公司
中国广东省
东莞市　东城区牛山外经工业园
电话号码：86 769 82290483

企业应急电话
亚太地区　　+80 0-2537-8747

2. 成分/组成信息

1、该产品是化学混合物

主要成分	CAS No.	EINECS编号	浓度	分类
甲基磺酸锡盐	53408-94-9	——	40～60g/L(锡)	C R22,R34,R43
甲基磺酸	75-75-2	200-898-6	140～180ml/L	C R34

C	腐蚀性
R22	误吞对人体有害
R34	引致灼伤
R43	接触皮肤可引起过敏

3. 危害辨识

接触皮肤可引起过敏；
误吞对人体有害；
引致灼伤。

根据法规的标准，被列为有害品。

昆山德力康电子科技有限公司 KUNSHAN DLK ELECTRONICS TECHNOLOGY CO.,LTD 研发部 2012 04 13 承认章

4. 急救措施

吸 入 ： 自暴露区移开。 如果呼吸困难，请给予氧气。 如果症状持续不退，请就医。

皮肤接触： 用清水持续洗涤至少15分钟。 如果出现起泡或发红不退，请就医。 衣服再次使用前要洗涤。需要及时就医

眼睛接触： 立刻大量用水冲洗眼睛至少15分钟，撑开眼睛。 如果疼痛或发红不退，请就医。

食 入： 用水漱口。 让受害者饮用1－3杯水，稀释胃中之物。 需要及时就医 如果受害者正失去意识、已失去意识或抽搐，切勿经口服用任何东西。

给医治人员的提示

对症处置。 依惯例治疗皮肤灼伤。

5. 消防措施

灭火方法及灭火剂： 使用洒水、泡沫、干粉或二氧化碳。

救火时的特殊危险性： 本产品遇火可引起有害蒸汽。

消防人员的特殊保护设备： 穿着全防护衣服及自给式空气呼吸装置。

进一步的信息： 本产品可释放腐蚀性蒸汽或雾汽。

6. 泄露应急处理

个人的预防措施
穿着适当的防护服。
戴呼吸罩.



环境预防措施
防止物质进入排水沟或水道。
不要直接排入水源。
如果溢出物进入水道或者下水道、或者污染土壤或植被时，请通知政府管理部门。

消除方法
用吸收剂覆盖或遏制。收集并处理。

7. 操作处置与储存

操作
仅在良好通风处使用. 避免呼吸蒸气。 避免接触眼睛、皮肤和衣服。 保持容器紧闭。 操作后彻底清洗。
有关贮存的进一步的信息： 做好个人卫生以预防意外暴露。

储存
储存条件： 存放在原来的容器中. 储存区域应该是：凉爽干燥通风良好切勿阳光直射远离不相容物质

8. 接触控制/个体防护

暴露极限

如果有暴露极限，则列在下面。

接触控制，个人保护

眼睛防护： 护目镜

手防护： 氯丁二烯手套。其它贵公司安全专业人员所建议之耐化学药品手套。 如果出现退化或化学渗透迹象，手套必须立刻脱下更换。

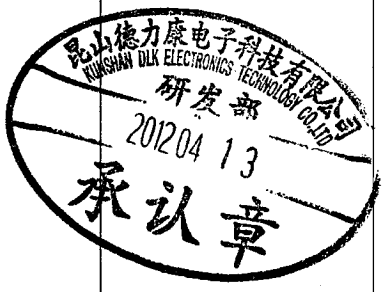
身体防护： 正常工作服。

呼吸系统防护： 如果有暴露在高浓度蒸气下的危险，请使用呼吸保护。 所选定之特定呼吸防护具必须以工作场所发现的化学物质气体浓度为基础，且不得超过呼吸防护具的工作极限。

工程控制 ： 最好使用工程方法对暴露进行预防或控制。方法包括工序或人员封闭、机械通风（局部排气）以及控制工序条件。

9. 理化特性

物理状态	液体
颜色	无色至淡黄色
气味	刺激性气味
PH值	≤1
沸点/沸程	无
闪点	不燃烧的
饱和蒸气压	与水相似
相对蒸汽密度	比空气重。
水溶性	易混合
相对密度	1.14±0.1
蒸发速率	比醚慢
挥发性有机物的	0 g/l



请注意：上述物理数据为典型值，不应作为规范。

10. 稳定性和反应活性

危险反应	在正常条件下是稳定的
避免接触的条件	高温.
禁配物	氧化物
危险的分解产物	未知,
聚合反应	不会发生。

11. 毒理学资料

本产品或其组分的毒理学资料获得以后，会列在本节中。

成分	甲基磺酸	急性口服中毒	LDLo大鼠 200mg/kg
成分	甲基磺酸	急性口服中毒	半致死剂量（LD50）大鼠2000mg/kg
成分	甲基磺酸	急性皮肤中毒	半致死剂量（LD50）兔子＜2000mg/kg
成分	甲基磺酸	皮肤刺激	对兔子完整皮肤进行单一4h半闭塞施用后产生灼伤（皮肤全厚度毁坏
成分	甲基磺酸	眼睛刺激	对兔子眼睛进行单一施用后产生严重的结膜刺激和角膜伤害
成分	甲基磺酸	致敏性	未对实验动物引起致敏反应
成分	甲基磺酸	致畸变性	动物试验中未见畸变的影响
成分	甲基磺酸	诱变性	与细菌或哺乳动物系统化验时，无致突变性

12. 生态学资料

本产品或其组分的生态毒理学资料获得以后，会列在本节中。

13. 废弃处置

环境预防措施： 防止物质进入排水沟或水道。
不要直接排入水源
如果溢出物进入水道或者下水道、或者污染土壤或植被时，请通知政府管理部门。

处理
根据当地、州（省）、联邦所有法规进行处理。
空容器可能含有有害残余物。 此物质及其容器必须以安全方法弃置。 容器彻底清洗以前，不要撕掉标签。

14. 运输信息

公路和铁路运输的等级。

无

海运分类(IMO-IMDG)：

无

空运分类(IATA/ICAO)：

无

运输分类可能会因容器的体积和国家或地区的法规而有所不同。

昆山德力康电子科技有限公司 KUNSHAN DLK ELECTRONICS TECHNOLOGY CO.,LTD 研发部 2012 04 13 承认章

15. 法规信息

标签
分类和标签已经依照法规完成。

危险符号和危险指示
C 有刺激性
含有： 甲基磺酸锡盐

R类短语
R22 误吞对人体有害
R34 引致灼伤
R43 接触皮肤可引起过敏。

S类短语
S26 如沾及眼睛，立即用大量清水冲洗，并尽快就医诊治。
S36/37/39 穿戴适当的防护服、手套和防护眼镜、面罩
S45 当发生事故或感到悄适时，立即就医诊治（可能的话，出示有关标签）。
S60 此物质及其容器必须作为有害废物处理。

中国。《现有化学物质名录》(CHINA) 所有的特定成分都被列入物质名录中，或被豁免，或通过供应商确认。

有毒物质控制法(TSCA) 本物料的所有成分都符合美国《有毒物质控制法》(TSCA)化学物质名录中有关名录清单的规定。

16. 其他信息

Emergency telephone number

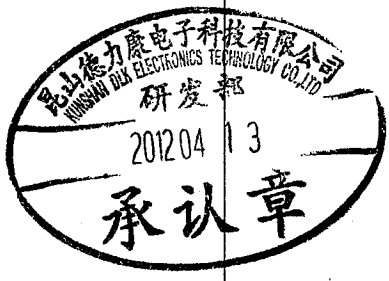
Asia-Pacific Region	+800 2537 8747
Asia-Pacific Region	+65 6542 9595
India	+800-650-1166
Indonesia	+803-65-7576
Pakistan	+800-11065-2-6542-7115
Sri Lanka (in Colombo)	+430-800-2-6542-7115
United States of America	+1-215-592-3000
European region	+33 (0) 140025045

图片解释

ACGIH	美国政府工业卫生协会
BAc	醋酸丁酯

OSHA	职业安全与健康署	
PEL	允许的暴露极限	
STEL	短期暴露极限(STEL)：	
TLV	极限阈值	
TWA	时间平均数(TWA)：	
|	加竖线表示已在原先的物质安全技术说明书上做了修订。	

就我们所掌握的知识和信息，截止本安全技术说明书发布之日，它提供的资料是正确的。所提供的信息仅仅作为安全处理，使用，生产，储存，运输，处置和排放的指导，而不是一份担保或品质说明书。本资料只针对所指定的具体物料，而对这种物料与其 它物料混合使用或在其它制程中使用的情况，则未必有效(除非在文本中有特别说明)。



昆山同心表面科技有限公司		文件编号：	AU-MSDS-001
		生效日期：	2011-12-15
		版本号：	A
标 题	金镀层物质安全资料表	页码编号：	1/4

MSDS

1 –产品及制造商信息

产品信息

中文名称：金　　英文名称：Gold

公司信息

注册名称： 昆山同心表面科技有限公司

地　　址： 昆山玉山镇城北紫竹路 1698 号

电话：0512-57739892　Fax :0512-57739869

2 –相关组分信息

物质成分：

氰化亚金钾： 98% ； CAS： 13967-50-5

氢氧化钾 ： 2% ； CAS： 1310-58-3

其他毒害物质：不清楚；

3 – 危害信息

本品不可燃。建议参考现场的其他物料。

吸入、接触或咽下会产生剧烈的、致命的中毒症状；

4 – 急救措施

因吸入接触时

将病人转移到新鲜空气中，保持病人体温和安静。

如果呼吸不规则或已停止，进行口对口的人工呼吸或求医。不得给病人吃任何药物。

如果病人没有意识，将病人安置好后叫救护车。

眼睛接触

眼睛张开，用大量水冲洗十分钟以上。如眼睛发红、灼痛或视力减退，应向眼科医生求诊。

皮肤接触

立即脱掉所有受污染的衣服，清除污染后才能重新使用。用大量的水冲洗接触皮肤。

吞咽

立即就医并告之吞咽物名称。

5 – 灭火措施

本产品不可燃。与酸接触或热分解时产生易燃的氰化氢气体。

着火时可使用的灭火剂：水、泡沫或干粉；

不可使用的灭火剂：二氧化碳；

灭火人员的特别装备：由于产品燃烧时会产生剧毒气体，灭火人员须配备便携式的隔离呼吸装置；

6 – 防护措施

安全预防措施：

避免皮肤接触、眼睛接触。绝对避免吸入产品粉尘。

环境安全预防措施：

防止任何物料流入下水道。

根据相关规定对回收的废物进行处理。

如果产品对下水道、江河造成污染，应根据法律程序向相关政府部门示警。

清除措施：

氰化物可被氯水破除。

收集产品，达到一定的量后用水溶解，然后用氯水处理。

7 – 装卸和储存

装卸：

在通风良好的区域进行。

推荐设备和程序：

关于个人安全，参见第 8 项。

遵守产品标签陈述的防范规定和工业安全规章。

任何情况下，必须回收散落在作业区内的产品。

禁用设备和禁止程序：

禁止在预备用于装卸的作业区内吸烟和饮食。

储存：

存放在干燥、通风良好的区域，储存容器密闭良好。

远离食物和饮水（包括提供给动物的）。

必须在下列条件下储存：储存间只有授权人才能进入，无酸存在。

8 – 暴露控制和个人防护

技术措施：

保证足够的通风，如果可能，在工作地点安装风扇进行适当的换风。

定期检查空气情况。

安全呼吸器具：

戴呼吸面罩。

手的防护：

戴手套操作。

眼睛和面部防护：

戴护目镜。

皮肤防护：

更多信息请参考第 11 项——毒物学信息。

9 – 物理化学性质

物质状态：固体

颜色：黄色

密度：19.32g/cm^3(25℃)

分子量：不适用

沸点：不适用

气味：无气味

水中溶解度：不溶解于水

10 – 稳定性和反应活性

与酸反应产生大量的剧毒气体。

有害分解产物：

能剧烈地与强氧化剂反应。遇热甚至弱酸均可分解，反应产生氰化氢、氮氧化物、一氧化碳、二氧化碳。二氧化碳也能参加反应产生氰化氢气体。

11 – 毒物学信息

吸入时：

人类吸入：在浓度为 200 to 400 mg/m3 (ppm)的空气中呼吸几分导致死亡。

吞咽时：

无相关数据。N/A !

皮肤接触时：

Draize 实验数据不详，但由于产品的腐蚀性，后果可能很严重。

眼睛接触时：

Draize 实验数据不详，但由于产品的腐蚀性，后果可能很严重。

12 – 生态学信息

本产品不允许排入下水道。

迁移性：

土壤中极易扩散。

降解度：

本品可生物降解。

聚积性：

不可聚积。

水中毒性：

无毒害

13 – 废品处置 DISPOSAL CONSIDERATIONS

能被氯水或过氧化氢破除（使用前请参考它们的物料安全资料）。

废品必须放置于高度密封的容器中，并及时贴上标签。回收利用时请咨询昆山同心电镀。

14 – 运输信息 TRANSPORT INFORMATION

本品运输须遵守的相关规定：公路运输遵守 ADR ；铁路运输遵守 RID；海运遵守 IMDG；航空运输遵守 ICAO/IATA：

15 – 法规信息

毒性化学物质管理法

危险物及有害物通识规则

特殊规定：

符合欧盟 ROHS 标准

16 – 其他信息

由于我们不知道使用者的工作条件，故本资料是根据我们目前所知及的国家相关法规而制订的。本产品不可在项目 1 规定以外的场合使用，不可在未取得安全资料时使用。

任何时候，使用者在使用中应采取必要的措施遵守当地法规。

本资料只作为一种描述性的信息而不作为产品性质的声明。

Test Report

Report No. SCL01G045364002

Applicant TAISU PLASTIFICATION MATERIAL SCI&TECH CO.,LTD

Address TAI SU INDUSTRIAL ZONE FENGXIN ROAD(LOUCUN NIUGENAO)GUANGMING NEW DISTEICT SHENZHEN

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name	PBT 301 30GF V0 BL-HF
Buyer	SONY
Sample Received Date	Oct. 24, 2014
Testing Period	Oct. 24, 2014 to Oct. 28, 2014

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs) , Polybrominated Diphenyl Ethers(PBDEs), Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).

Tested by Mike

Reviewed by Jue

Approved by

Danny Liu
Technical Manager

Date Oct. 28, 2014

No. R187216694

CENTRE TESTING INTERNATIONAL CORPORATION
Complaint call: 0755-33681700 Complaint E-mail: complaint@cti-cert.com E-mail:info@cti-cert.com
Hotline 400-6788-333
www.cti-cert.com

Test Report

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyl(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Fluorine(F)	Refer to BS EN 14582:2007	IC
Chlorine(Cl)	Refer to BS EN 14582:2007	IC
Bromine(Br)	Refer to BS EN 14582:2007	IC
Iodine(I)	Refer to BS EN 14582:2007	IC

Test Result(s)

Tested Item(s)	**Result**	**MDL**
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg

Tested Item(s)	**Result**	**MDL**
Polybrominated Biphenyl(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Test Report

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers(PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Halogen(s)		
Fluorine(F)	N.D.	10 mg/kg
Chlorine(Cl)	N.D.	10 mg/kg
Bromine(Br)	N.D.	10 mg/kg
Iodine(I)	N.D.	10 mg/kg

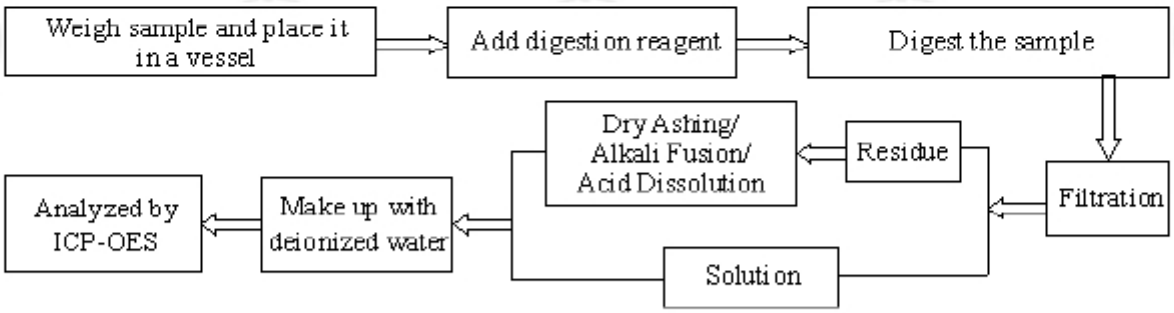
Tested Sample/Part Description Blue plastic grains

Note: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

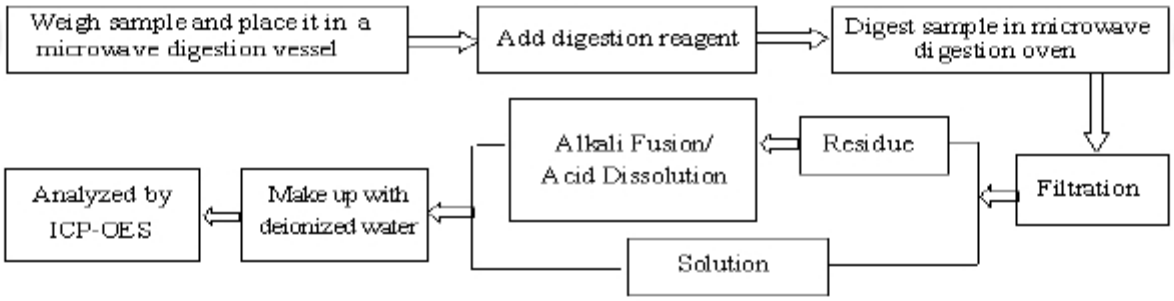
Test Report

Test Process

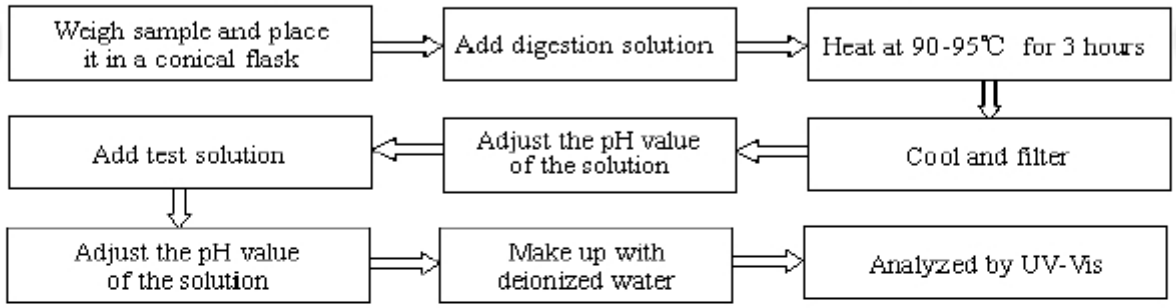
1. Lead (Pb), Cadmium (Cd)



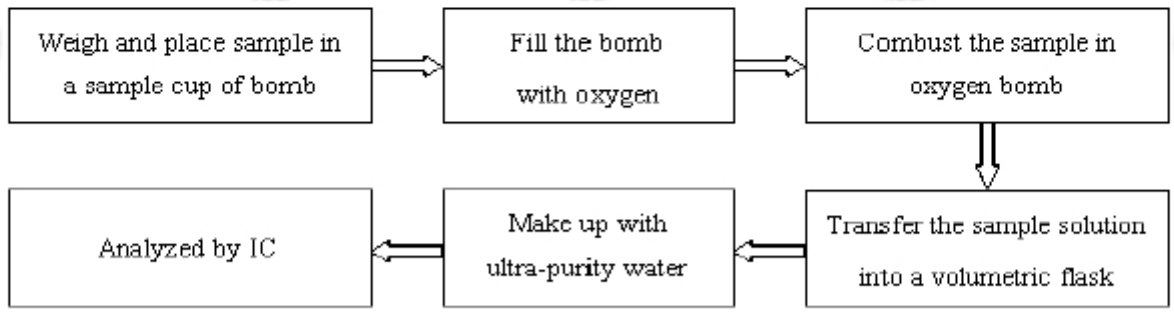
2. Mercury (Hg)



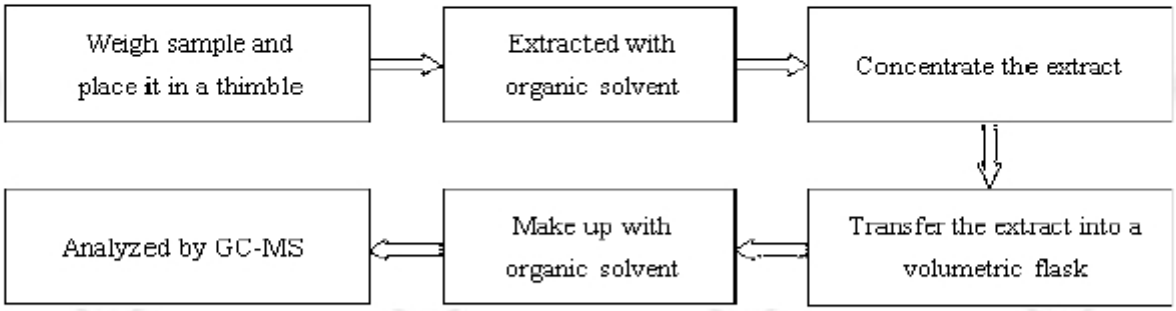
3. Hexavalent Chromium(Cr(VI))



4. Bromine(Br), Chlorine(Cl), Fluorine(F), Iodine(I)



5. Polybrominated Biphenyl(PBBs) , Polybrominated Diphenyl Ethers(PBDEs)



Test Report

Photo(s) of the sample(s)



*** End of report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

Test Report

Report No. SCL01G009335001

Applicant	TAISU PLASTIFICATION MATERIAL SCI&TECH CO.,LTD
Address	TAI SU INDUSTRIAL ZONE FENGXIN ROAD(LOUCUN NIUGENAO)GUANGMING NEW DISTEICT SHENZHEN

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name	PBT G30 V0 BK-HF
Buyer	SONY
Sample Received Date	Jun. 17, 2014
Testing Period	Jun. 17, 2014 to Jun. 20, 2014

Test Requested	As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs) , Polybrominated Diphenyl Ethers(PBDEs), Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I) in the submitted sample(s).
Test Method	Please refer to the following page(s).
Test Result(s)	Please refer to the following page(s).

Tested by: Rick Lin

Reviewed by: Vargas He

Approved by:

Danny Liu
Technical Manager

Date: Jun. 20, 2014

No. R101224987

Test Report

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyl(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Fluorine(F)	Refer to BS EN 14582:2007	IC
Chlorine(Cl)	Refer to BS EN 14582:2007	IC
Bromine(Br)	Refer to BS EN 14582:2007	IC
Iodine(I)	Refer to BS EN 14582:2007	IC

Test Result(s)

Tested Item(s)	**Result**	**MDL**
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg

Tested Item(s)	**Result**	**MDL**
Polybrominated Biphenyl(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Test Report

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers(PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Halogen(s)		
Fluorine(F)	N.D.	10 mg/kg
Chlorine(Cl)	N.D.	10 mg/kg
Bromine(Br)	N.D.	10 mg/kg
Iodine(I)	N.D.	10 mg/kg

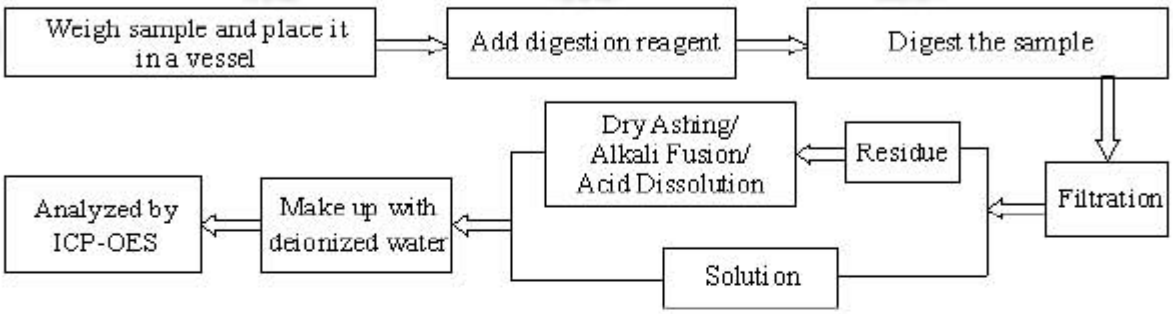
Tested Sample/Part Description Black plastic grains

Note: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

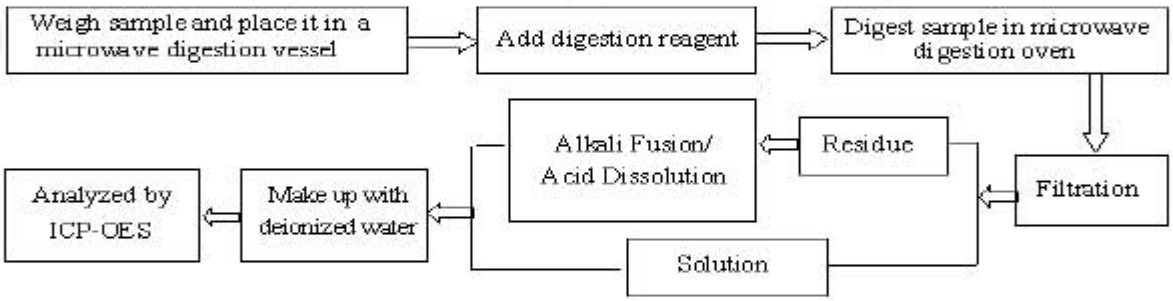
Test Report

Test Process

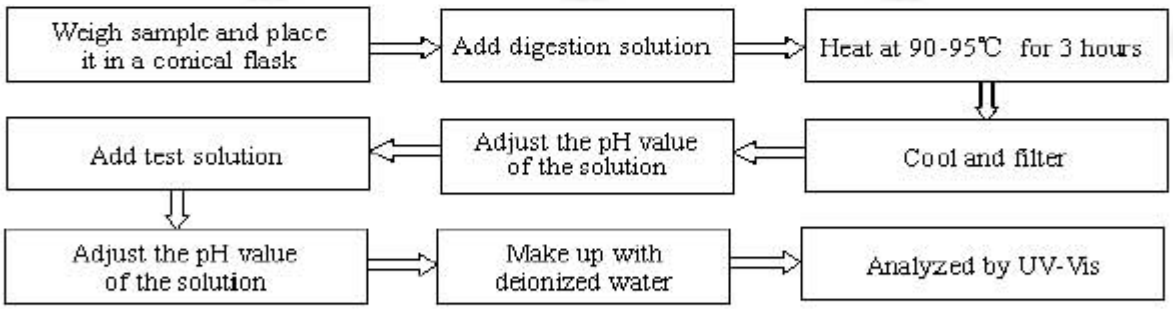
1. Cadmium (Cd), Lead (Pb)



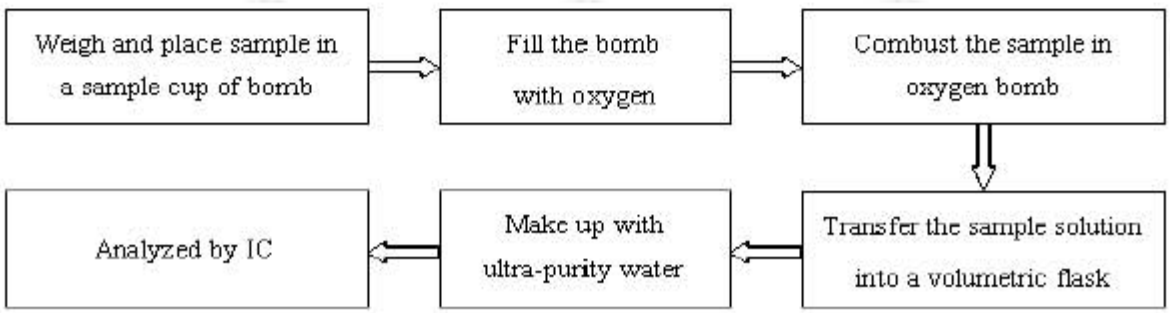
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))

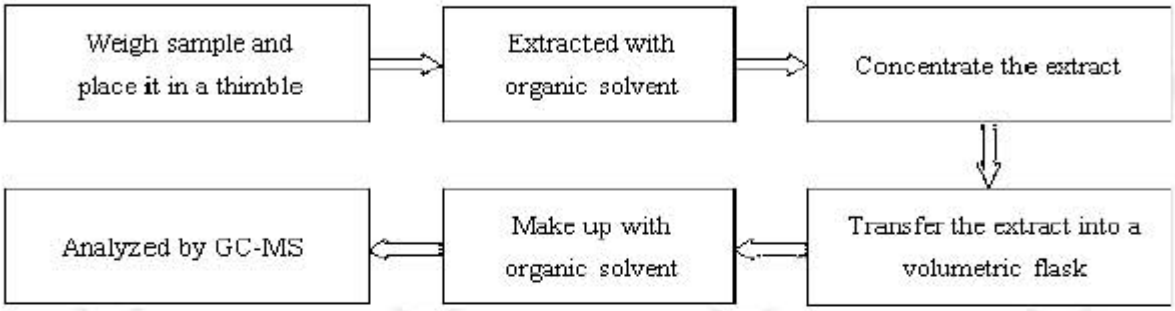


4. Bromine(Br), Chlorine(Cl), Fluorine(F), Iodine(I)



Test Report

5. Polybrominated Biphenyl(PBBs) , Polybrominated Diphenyl Ethers(PBDEs)



Test Report

Photo(s) of the sample(s)



*** End of report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

Test Report

GUANGZHOU COPPER MATERIALS CO., LTD

CONGHUA ECONOMAIC AND TECHNOLOGICAL DEVELOPMENT DISTRICT,TAIPING TOWN, CONGHUA,GUANGZHOU
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : H65 (C2680)

SGS Job No. :	GZIN1404003960PC - GZ
Internal Reference No. :	5.1
Date of Sample Received :	02 Apr 2014
Testing Period :	02 Apr 2014 - 08 Apr 2014
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 samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium 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 Ltd.

Alkene_Liang
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Guangzhou Customs Technical Center Chemical Laboratory

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.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

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN14-044205.001	Brassy metal sheet

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

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	20
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative

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 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.

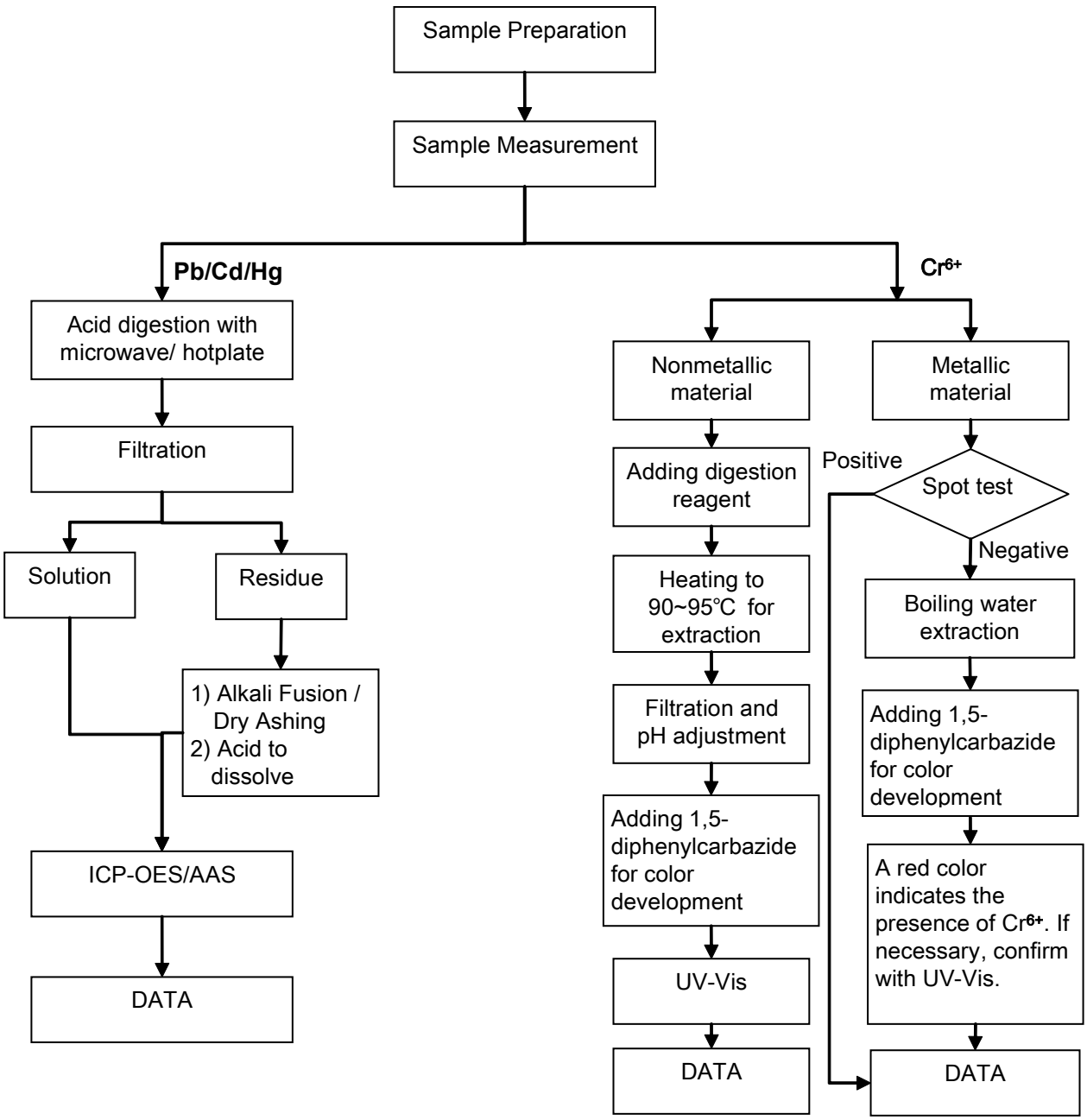
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.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

ATTACHMENTS

RoHS Testing Flow Chart

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



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.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

Sample photo:



CAN14-044205.001

SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.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

测试报告

No. SHAEC1420915204　　日期: 2014年11月11日　第1页,共5页

宁波盛发铜业有限公司

宁波市镇海区蟹浦镇汇源路158号

以下测试之样品是由申请者所提供及确认：铅黄铜棒（线）

SGS工作编号：	SP14-033365 - SH
型号：	C3602（HPb60-3)
样品接收日期：	2014年11月04日
测试周期：	2014年11月04日 - 2014年11月11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

通标标准技术服务有限公司

授权签名

Marry Ma马广媛

批准签署人

本报告是编号为SHAEC1420915203 报告的中文版本.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233　t E&E (86-21) 61402553　f E&E (86-21)64953679　www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼　邮编: 200233　HL: (86-21) 61402594　HL: (86-21)54500353　e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	SHA14-209152.002	黄色金属棒

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, 用点测试法/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	单位	MDL	*002*
镉 (Cd)	100	mg/kg	2	9
铅(Pb)	1000	mg/kg	2	23708▲
汞 (Hg)	1000	mg/kg	2	ND
六价铬(CrVI)	-	-	◇	阴性
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

检测专用章 Testing Service
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. Testing Center

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

测试项目	限值	单位	MDL	*002*
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.

(2) ◇点测试法:

阴性= 未检测到六价铬,阳性 = 检测到六价铬;

(当点测试结果为阴性或无法确定时,将采用沸水萃取法作进一步的结果验证.)

◇沸水萃取法:

阴性= 未检测到六价铬

阳性= 检测到六价铬; 表明50 cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02 mg/kg

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.

(3) ▲根据客户提供的声明，编号002中的铅(Pb)被欧盟RoHS指令2011/65/EU豁免，相应豁免条文(请以英文原文为准) |ANNEX III 6(c)|：铜合金中的铅含量不得超过4%。

检测专用章 Testing Service

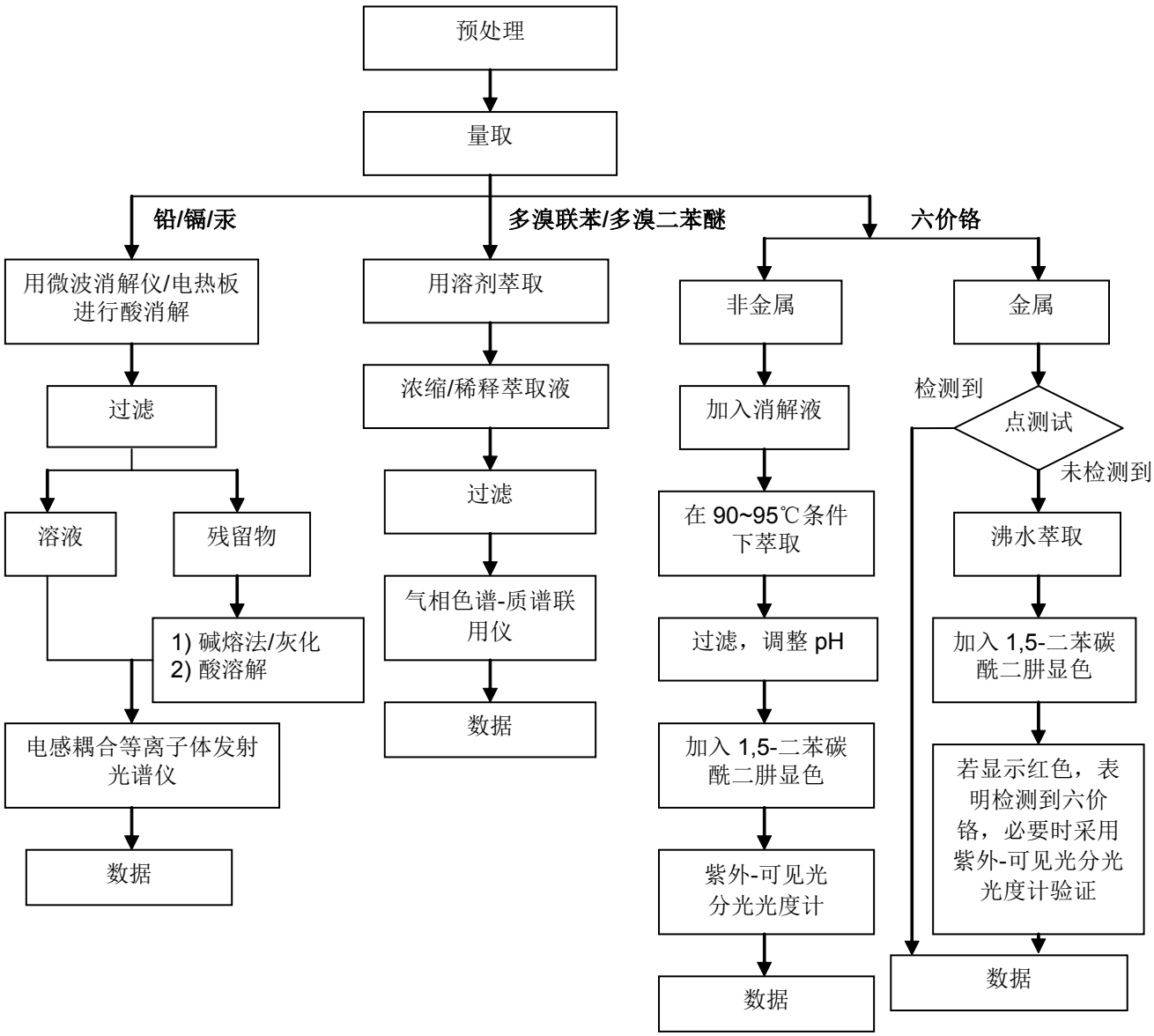
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com

附件

RoHS 测试流程图

1) 分析人员：张小波/徐刚/陈怀磊/秦兴章
2) 项目负责人：施青/金黎霞/黄婷
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）。



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

样品照片:



SHA14-209152.002

此照片仅限于随SGS正本报告使用

*** 报告完 ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Test Report

Report No. RHS05G019183001 Page 1 of 6

Applicant SHANGHAI DEF ELECTRONIC MATERICAL CO.,LTD.
Address NO 858.PANJING ROAD, BAOSHAN DISTRICT,SHANGHAI

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name	Low carbon steel
Sample Received Date	Jun. 6, 2014
Testing Period	Jun. 6, 2014 to Jun. 10, 2014

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Perfluorooctanoic Acid (PFOA), Perfluorooctane Sulfonates(PFOS) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).

Tested by Chen Lijuan

Approved by Su Hongwei

Su Hongwei
Senior Laboratory Manager

Reviewed by Chen Kaimin

Date Jun. 10, 2014

No. 1087271431

Centre Testing International Co.,Ltd. Shanghai Branch No.1996,New Jinqiao Road, Pudong District,Shanghai,China

Test Report

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury(Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis
Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Perfluorooctanoic Acid (PFOA)	Refer to US EPA 3550C:2007	LC-MS-MS
Perfluorooctane Sulfonates(PFOS)	Refer to US EPA 3550C:2007	LC-MS-MS

Test Result(s)

Tested Item(s)	**Result**	**MDL**
Lead(Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	Negative	/

Tested Item(s)	**Result**	**MDL**
Polybrominated Biphenyls (PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Test Report

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Perfluorooctanoic Acid (PFOA)	N.D.	5 mg/kg
Perfluorooctane Sulfonates(PFOS)	N.D.	5 mg/kg

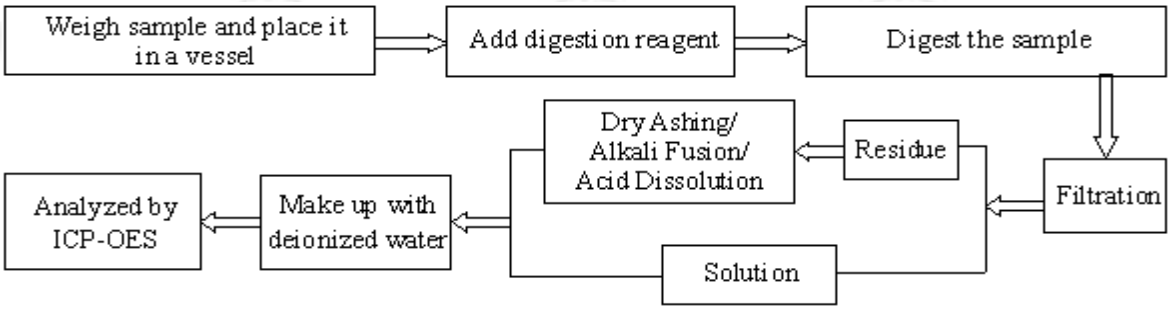
Tested Sample/Part Description Silver-grey metal

Note: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million
-Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.

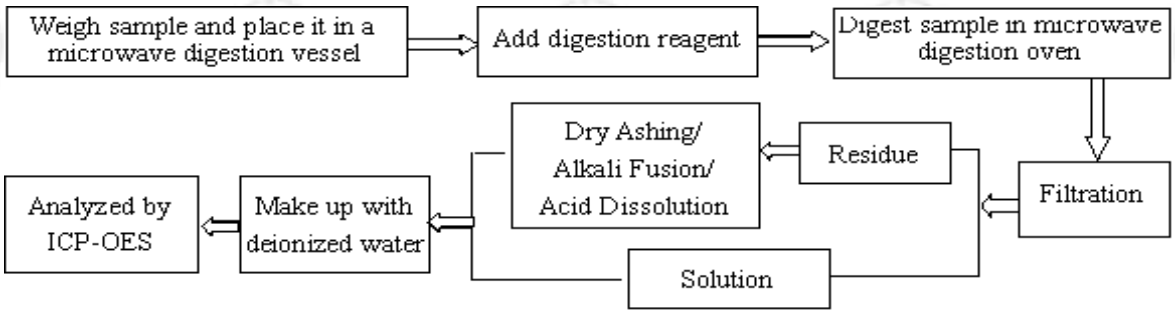
Test Report

Test Process

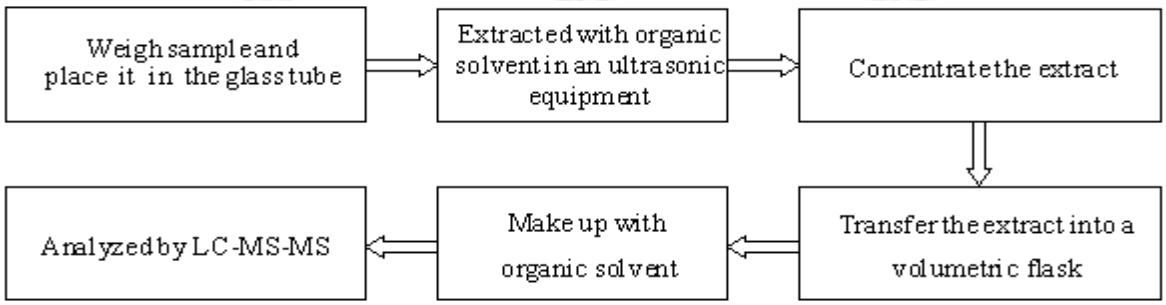
1. Lead(Pb), Cadmium(Cd)



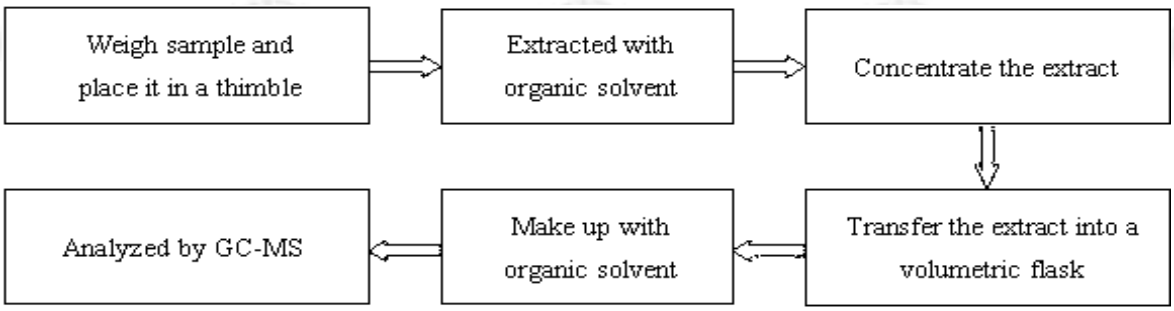
2. Mercury(Hg)



3. Perfluorooctanoic Acid (PFOA), Perfluorooctane Sulfonates(PFOS)

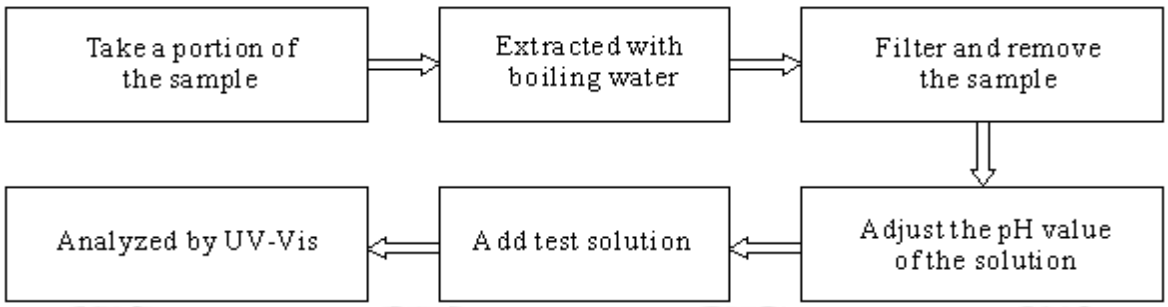


4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



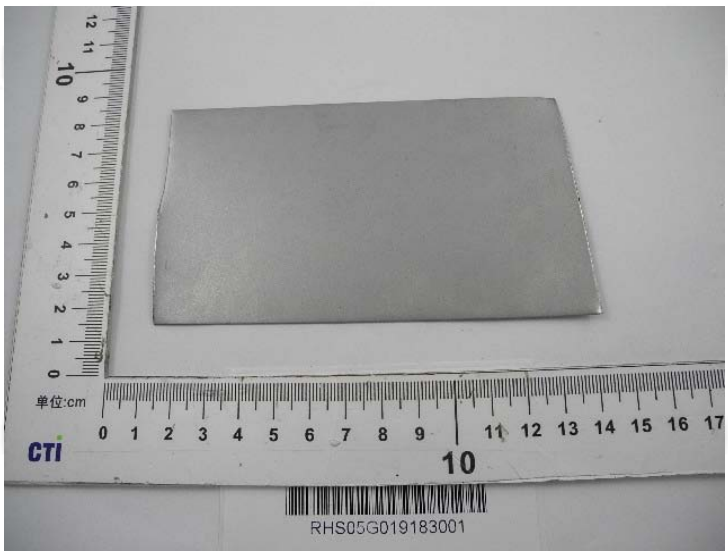
Test Report

5. Hexavalent Chromium (Cr(VI))



Test Report

Photo(s) of the sample(s)



*** End of report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

测试报告

No. SHAEC1414151608　　日期: 2014年08月06日　第1页,共8页

苏州市长风镀饰有限公司

江苏省苏州市相城区黄桥镇黄桥工业区1#

以下测试之样品是由申请者所提供及确认：雾锡镀层

SGS工作编号：	SP14-022913 - SUZ
主要成分：	Sn
样品接收日期：	2014年07月28日
测试周期：	2014年07月28日 - 2014年08月05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

通标标准技术服务有限公司

授权签名



Marry Ma马广媛

批准签署人

本报告是编号为SHAEC1414151607报告的中文版本.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233　t E&E (86-21) 61402553　f E&E (86-21)64953679　www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼　邮编: 200233　HL: (86-21) 61402594　HL: (86-21)54500353　e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	SHA14-141516.004	银色镀层

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) 酸洗脱镀层, 参考IEC62321-5:2013, 用ICP-OES测定镉、铅的含量
(2) 酸洗脱镀层, 参考IEC62321-4:2013, 用ICP-OES测定汞的含量
(3) 参考IEC 62321:2008, 用点测试法/紫外-可见分光光度计比色法测定六价铬的含量

测试项目	限值	单位	MDL	*004*
铅(Pb)	1000	mg/kg	10	49
镉(Cd)	100	mg/kg	10	ND
汞(Hg)	1000	mg/kg	10	ND
六价铬(CrVI)	-	-	◇	阴性

备注 :

(1) 最大允许极限值引用自指令2011/65/EU 附录II.

(2) ◇点测试法:
阴性= 镀层中未检测到六价铬,阳性 = 镀层中检测到六价铬;
(当点测试结果为阴性或无法确定时,将采用沸水萃取法作进一步的结果验证.)
◇沸水萃取法:
阴性 = 镀层中未检测到六价铬
阳性 = 镀层中检测到六价铬; 表明50 cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02 mg/kg
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.

卤素

测试方法 : 参照EN 14582:2007方法测定, 采用IC进行分析.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

测试项目	单位	MDL	*004*
氟(F)	mg/kg	50	ND
氯(Cl)	mg/kg	50	ND
溴(Br)	mg/kg	50	ND
碘(I)	mg/kg	50	ND

元素

测试方法 : 参照US EPA 方法3050B:1996测定, 采用ICP-OES进行分析

测试项目	单位	MDL	*004*
锑(Sb)	mg/kg	10	ND

备注 :

Sb为整体测试

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.

测试项目	限值	单位	MDL	*004*
全氟辛烷磺酰基化合物 (PFOS)- 酸,金属盐和酰胺	1	μg/m²	1	ND
全氟辛酸 (PFOA)	-	μg/m²	1	ND

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.

检测专用章 Testing Service

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

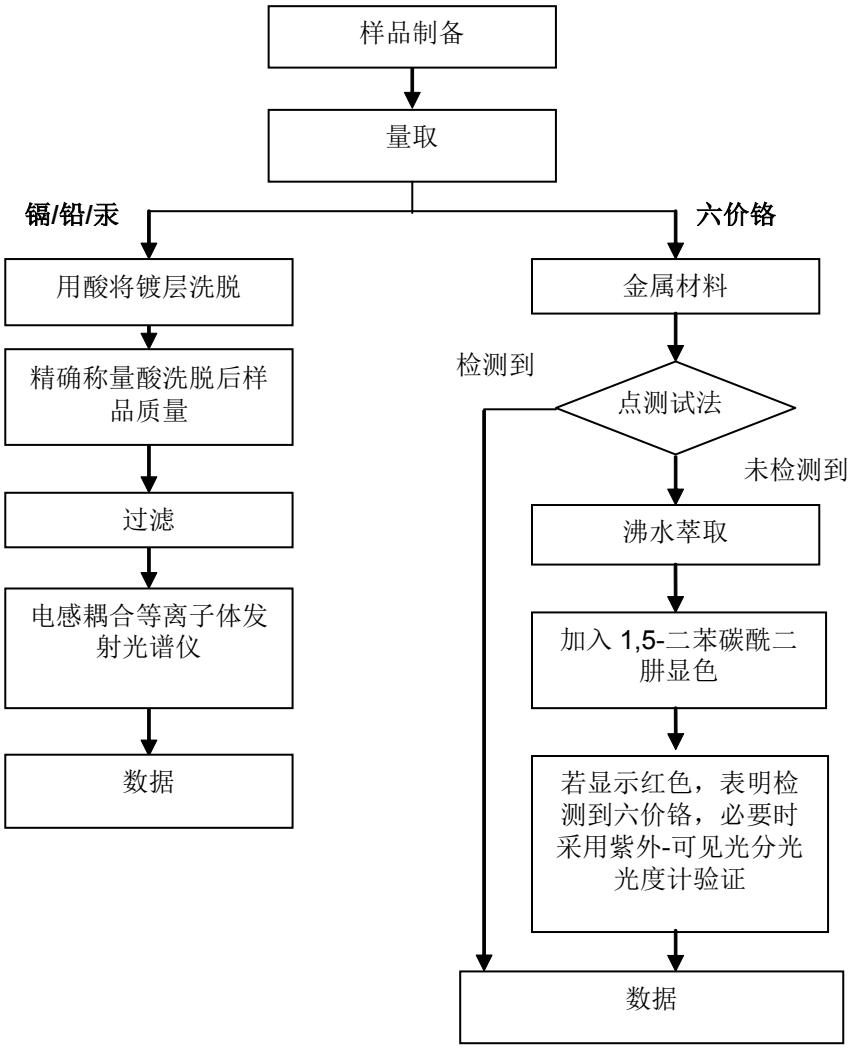
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

附件

镀层 Pb/Cd/Hg/Cr^{6+}测试流程图

1) 分析人员：宋柯静/陈怀磊
2) 项目负责人：张春华/徐亮

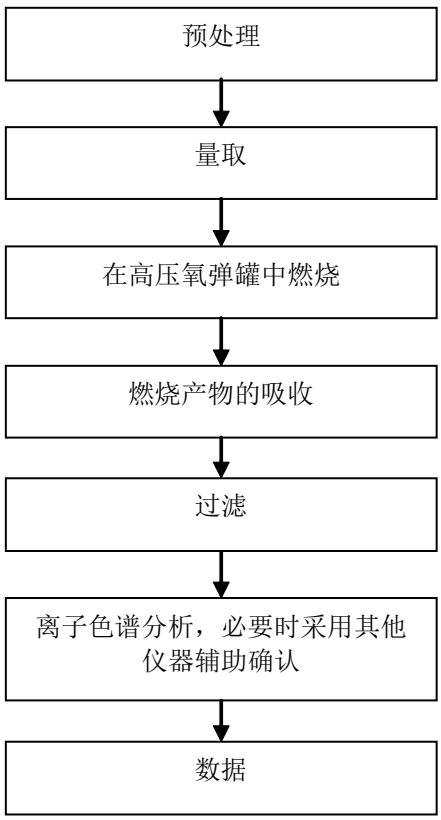


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

附件

Halogen(氧弹法)测试流程图

1) 分析人员: 印宇
2) 项目负责人: 李丹

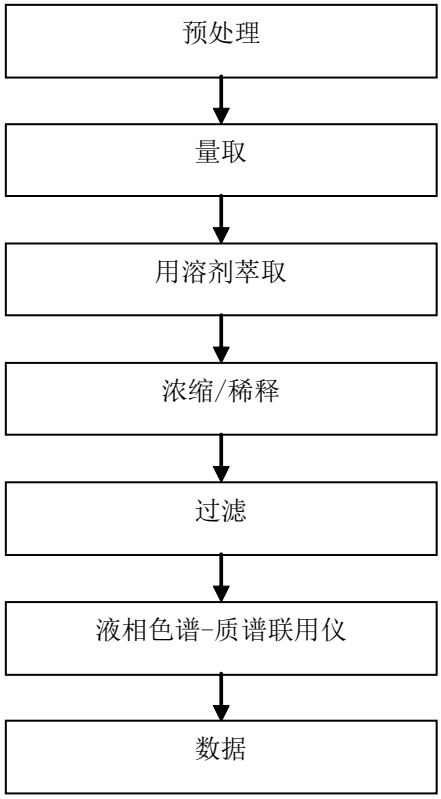


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

附件

PFOS/PFOA 测试流程图

1) 分析人员: 胡守江
2) 项目负责人: 李晓茹

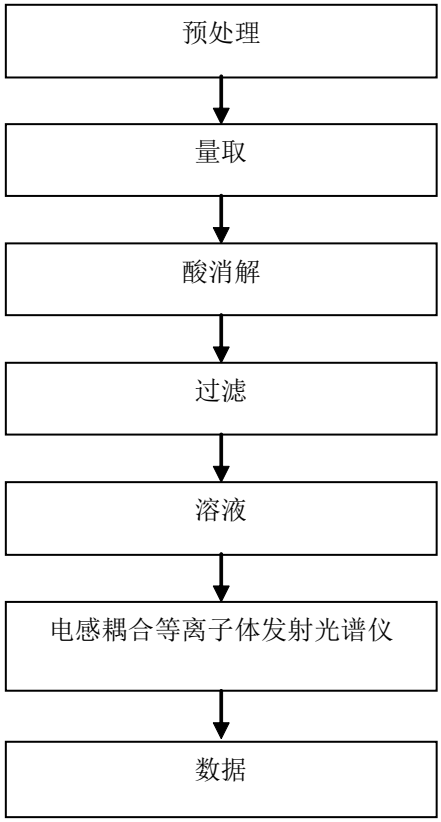


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

附件

元素测试流程图

1) 分析人员: 汪红新/ 施青
2) 项目负责人:张春华



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

样品照片:



SHA14-141516.004

此照片仅限于随SGS正本报告使用

*** 报告完 ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

测试报告

No. SHAEC1414151606 日期: 2014年08月06日 第1页,共8页

苏州市长风镀饰有限公司

江苏省苏州市相城区黄桥镇黄桥工业区1#

以下测试之样品是由申请者所提供及确认：亮锡镀层

SGS工作编号：	SP14-022913 - SUZ
主要成分：	Sn
样品接收日期：	2014年07月28日
测试周期：	2014年07月28日 - 2014年08月05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

通标标准技术服务有限公司

授权签名

Marry Ma马广媛

批准签署人

本报告是编号为SHAEC1414151605报告的中文版本.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	SHA14-141516.003	银色镀层

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) 酸洗脱镀层, 参考IEC62321-5:2013, 用ICP-OES测定镉、铅的含量
(2) 酸洗脱镀层, 参考IEC62321-4:2013, 用ICP-OES测定汞的含量
(3) 参考IEC 62321:2008, 用点测试法/紫外-可见分光光度计比色法测定六价铬的含量

测试项目	限值	单位	MDL	*003*
铅(Pb)	1000	mg/kg	10	41
镉(Cd)	100	mg/kg	10	ND
汞(Hg)	1000	mg/kg	10	ND
六价铬(CrVI)	-	-	◇	阴性

备注 :

(1) 最大允许极限值引用自指令2011/65/EU 附录II.

(2) ◇点测试法:
阴性= 镀层中未检测到六价铬,阳性 = 镀层中检测到六价铬;
(当点测试结果为阴性或无法确定时,将采用沸水萃取法作进一步的结果验证.)
◇沸水萃取法:
阴性 = 镀层中未检测到六价铬
阳性 = 镀层中检测到六价铬; 表明50 cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02 mg/kg
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.

卤素

测试方法 : 参照EN 14582:2007方法测定, 采用IC进行分析.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

测试项目	单位	MDL	*003*
氟(F)	mg/kg	50	ND
氯(Cl)	mg/kg	50	ND
溴(Br)	mg/kg	50	ND
碘(I)	mg/kg	50	ND

元素

测试方法 : 参照US EPA 方法3050B:1996测定, 采用ICP-OES进行分析

测试项目	单位	MDL	*003*
锑(Sb)	mg/kg	10	ND

备注 :

Sb为整体测试

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.

测试项目	限值	单位	MDL	*003*
全氟辛烷磺酰基化合物 (PFOS)- 酸,金属盐和酰胺	1	μg/m²	1	ND
全氟辛酸 (PFOA)	-	μg/m²	1	ND

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.

检测专用章 Testing Service

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

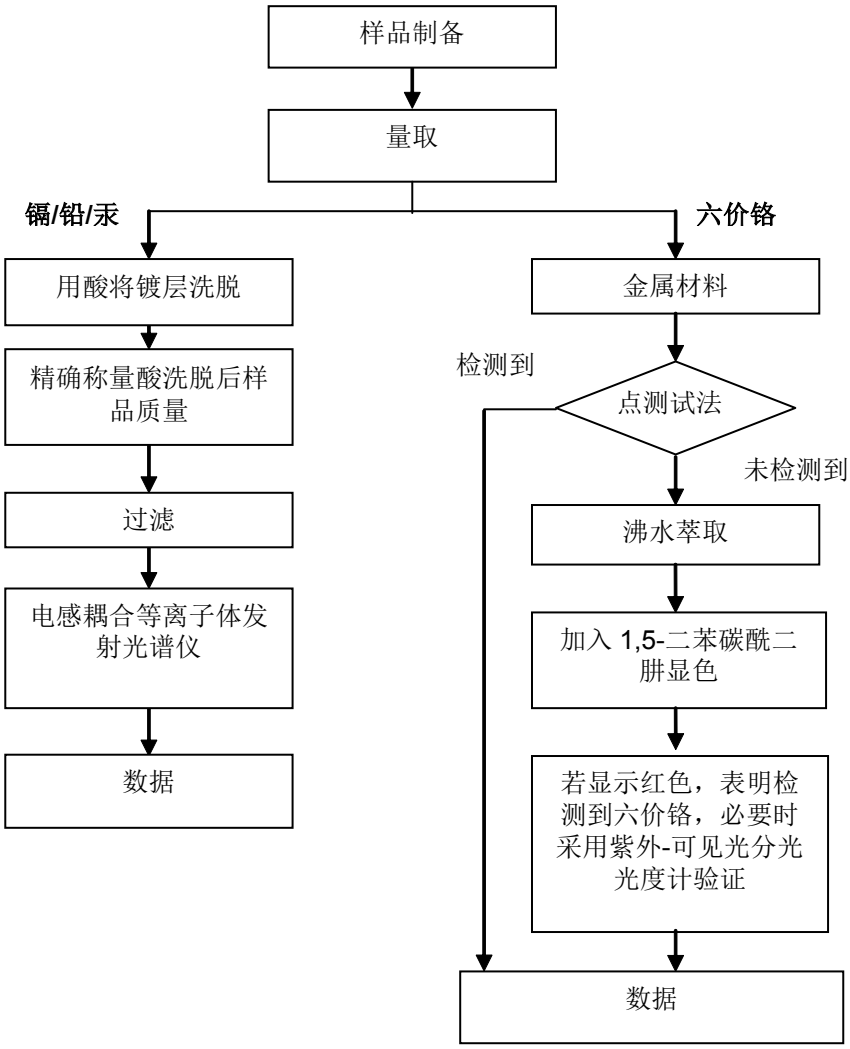
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

附件

镀层 Pb/Cd/Hg/Cr^{6+}测试流程图

1) 分析人员：宋柯静/陈怀磊
2) 项目负责人：张春华/徐亮

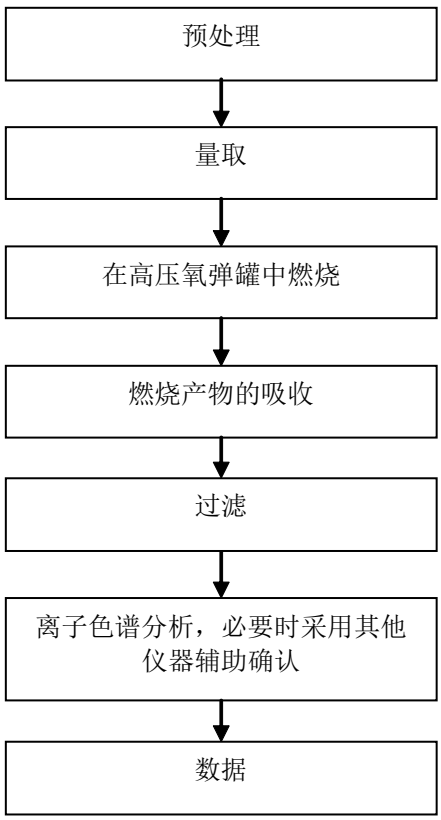


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

附件

Halogen(氧弹法)测试流程图

1) 分析人员: 印宇
2) 项目负责人: 李丹

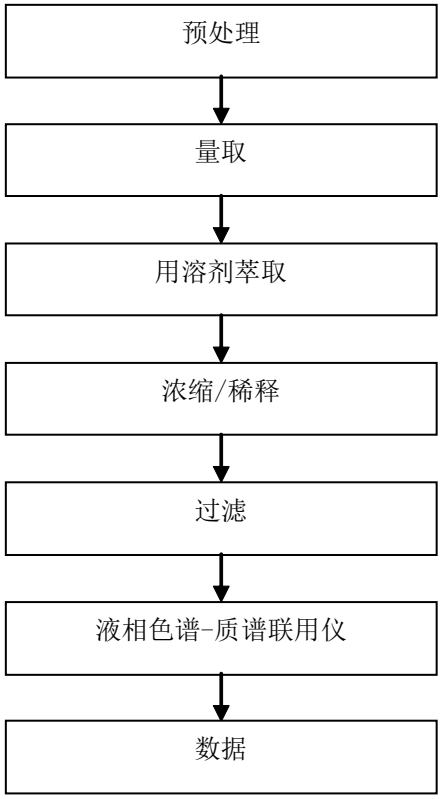


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

附件

PFOS/PFOA 测试流程图

1) 分析人员: 胡守江
2) 项目负责人: 李晓茹



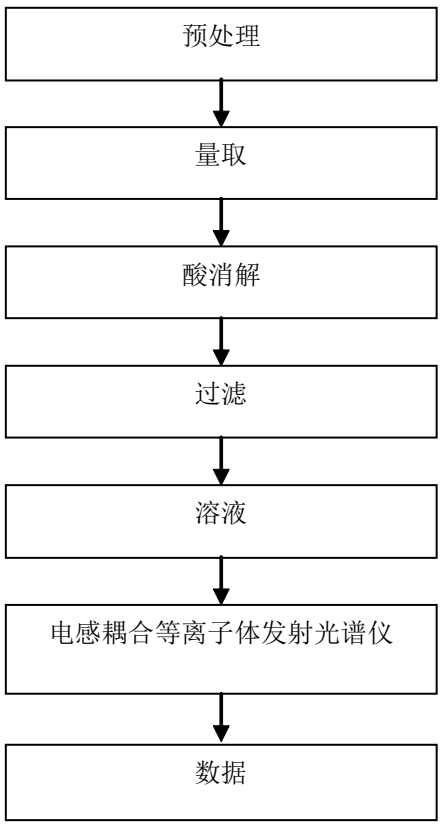
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

附件

元素测试流程图

1) 分析人员: 汪红新/ 施青
2) 项目负责人:张春华



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

样品照片:



SHA14-141516.003

此照片仅限于随SGS正本报告使用

*** 报告完 ***

检测专用章
Testing Service

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

测试报告

No. SHAEC1414151604　　日期: 2014年08月06日　第1页,共8页

苏州市长风镀饰有限公司

江苏省苏州市相城区黄桥镇黄桥工业区1#

以下测试之样品是由申请者所提供及确认：镍镀层

SGS工作编号：	SP14-022913 - SUZ
主要成分：	Ni
样品接收日期：	2014年07月28日
测试周期：	2014年07月28日 - 2014年08月05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

通标标准技术服务有限公司

授权签名



Marry Ma马广媛

批准签署人

本报告是编号为SHAEC1414151603报告的中文版本.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233　t E&E (86-21) 61402553　f E&E (86-21)64953679　www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼　邮编: 200233　HL: (86-21) 61402594　HL: (86-21)54500353　e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	SHA14-141516.002	银色镀层

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) 酸洗脱镀层, 参考IEC62321-5:2013, 用ICP-OES测定镉、铅的含量
(2) 酸洗脱镀层, 参考IEC62321-4:2013, 用ICP-OES测定汞的含量
(3) 参考IEC 62321:2008, 用点测试法/紫外-可见分光光度计比色法测定六价铬的含量

测试项目	限值	单位	MDL	*002*
铅(Pb)	1000	mg/kg	10	15
镉(Cd)	100	mg/kg	10	ND
汞(Hg)	1000	mg/kg	10	ND
六价铬(CrVI)	-	-	◇	阴性

备注 :

(1) 最大允许极限值引用自指令2011/65/EU 附录II.

(2) ◇点测试法:
阴性= 镀层中未检测到六价铬,阳性 = 镀层中检测到六价铬;
(当点测试结果为阴性或无法确定时,将采用沸水萃取法作进一步的结果验证.)
◇沸水萃取法:
阴性 = 镀层中未检测到六价铬
阳性 = 镀层中检测到六价铬; 表明50 cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02 mg/kg
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.

卤素

测试方法 : 参照EN 14582:2007方法测定, 采用IC进行分析.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

测试项目	单位	MDL	*002*
氟(F)	mg/kg	50	ND
氯(Cl)	mg/kg	50	ND
溴(Br)	mg/kg	50	ND
碘(I)	mg/kg	50	ND

元素

测试方法 : 参照US EPA 方法3050B:1996测定, 采用ICP-OES进行分析

测试项目	单位	MDL	*002*
锑(Sb)	mg/kg	10	ND

备注 :

Sb为整体测试

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.

测试项目	限值	单位	MDL	*002*
全氟辛烷磺酰基化合物 (PFOS)- 酸,金属盐和酰胺	1	μg/m²	1	ND
全氟辛酸 (PFOA)	-	μg/m²	1	ND

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.

检测专用章 Testing Service

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

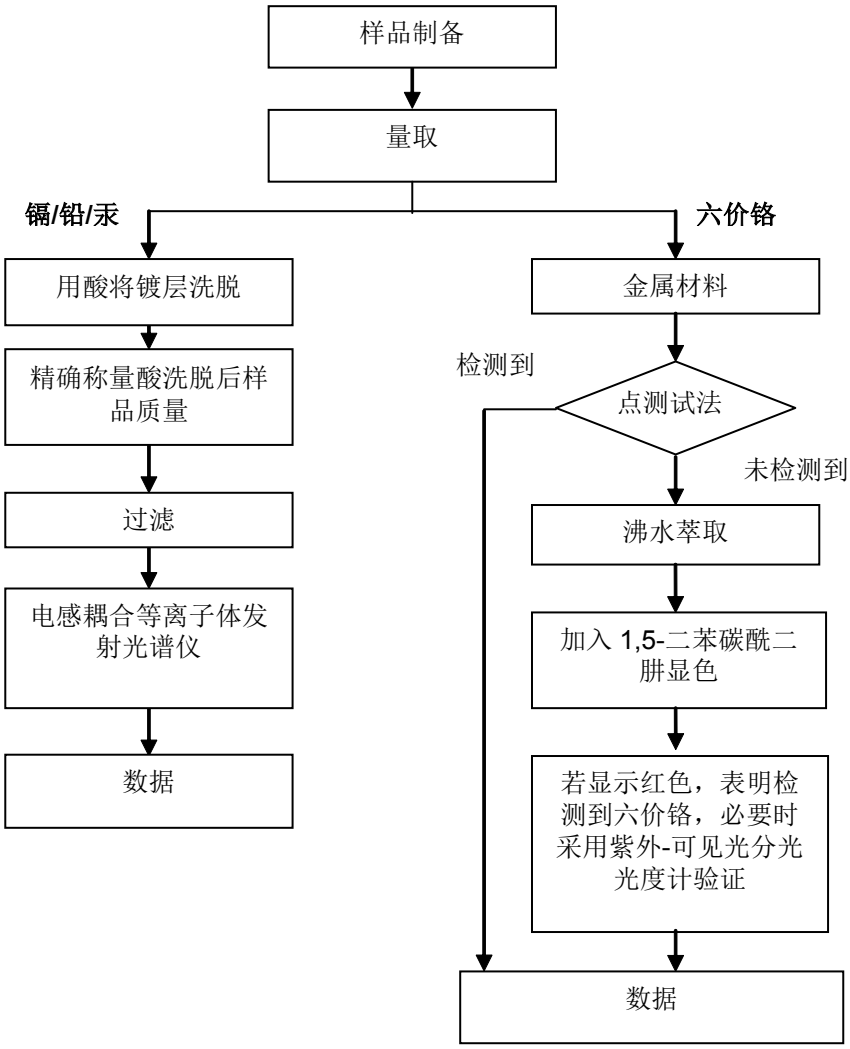
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

附件

镀层 Pb/Cd/Hg/Cr^{6+}测试流程图

1) 分析人员：宋柯静/陈怀磊
2) 项目负责人：张春华/徐亮

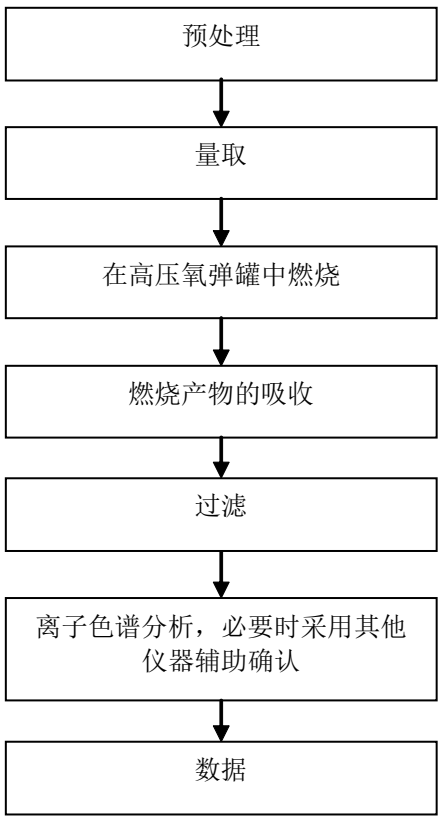


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

附件

Halogen(氧弹法)测试流程图

1) 分析人员: 印宇
2) 项目负责人: 李丹

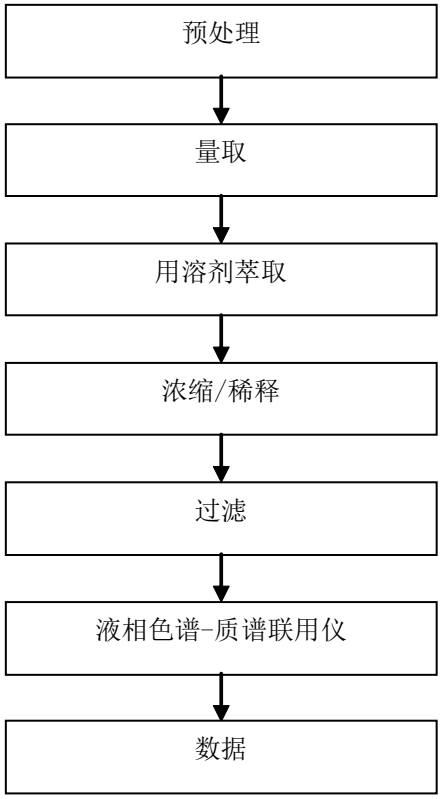


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

附件

PFOS/PFOA 测试流程图

1) 分析人员: 胡守江
2) 项目负责人: 李晓茹



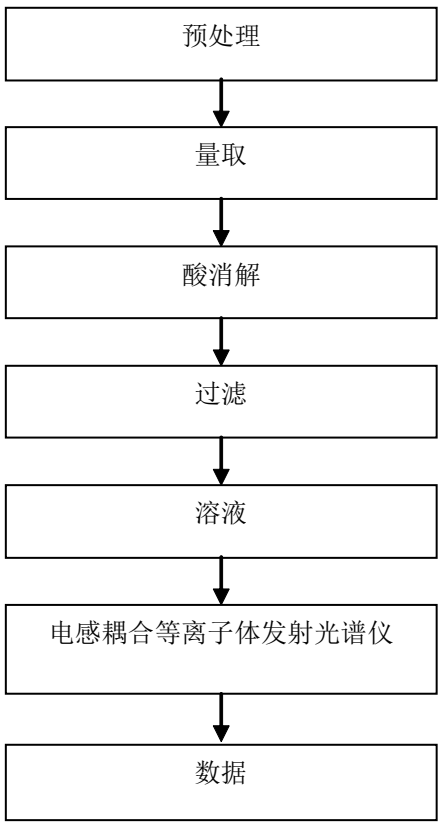
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

附件

元素测试流程图

1) 分析人员: 汪红新/ 施青
2) 项目负责人:张春华



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86–21) 61402594 HL: (86–21)54500353 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

样品照片:



SHA14-141516.002

此照片仅限于随SGS正本报告使用

*** 报告完 ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

检测报告
Test Report

报告编号 ECL01G029554002E　　第 1 页　共 5 页
Report No. ECL01G029554002E　　Page 1 of 5

申请单位 昆山同心表面科技有限公司
Applicant KUNAHAN TONGXIN SURFACE SCIENCE AND TECHNOLOGY CO.LTD
地　　址 昆山市玉山鎮紫竹路1698號
Address NO.1968 ZIZHU ROAD.YUSHAN TOWN.KANSHAN CITY.

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

样品名称 Sample Name	鍍金
样品接收日期 Sample Received Date	2014.12.05 Dec. 5, 2014
样品检测日期 Testing Period	2014.12.05-2014.12.09 Dec. 5, 2014 to Dec. 9, 2014
检测要求 **Test Requested**	根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，全氟辛烷磺酸盐(PFOS)进行测试。 As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Perfluorooctane Sulfonates(PFOS) in the submitted sample(s).
检测依据/检测结果 **Test Method/Test Result(s)**	请参见下页。 Please refer to the following page(s).

主　　检
Tested by　Ethan

批　　准
Approved by　Su Hongwei

Su Hongwei
Laboratory Manager

审　　核
Reviewed by　XuJing

日　　期
Date　2014.12.09

No. R187772695

深圳市华测检测技术股份有限公司上海分公司
CTI Testing International Co.,Ltd. Shanghai Branch
上海市浦东新区新金桥路1996号
No.1996,New Jinqiao Road, Pudong District,Shanghai,China

检测报告
Test Report

检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅(Pb) Lead (Pb)	参考IEC 62321-5:2013 Ed.1.0 Refer to IEC 62321-5:2013 Ed.1.0	ICP-OES
镉(Cd) Cadmium (Cd)	参考IEC 62321-5:2013 Ed.1.0 Refer to IEC 62321-5:2013 Ed.1.0	ICP-OES
汞(Hg) Mercury (Hg)	参考IEC 62321-4:2013 Ed.1.0 Refer to IEC 62321-4:2013 Ed.1.0	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis
全氟辛烷磺酸盐(PFOS) Perfluorooctane Sulfonates(PFOS)	参考US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS

检测结果 Test Result(s)

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
铅(Pb) Lead (Pb)	110 mg/kg	2 mg/kg
镉(Cd) Cadmium (Cd)	N.D.	2 mg/kg
汞(Hg) Mercury (Hg)	N.D.	2 mg/kg
六价铬(Cr(VI)) Hexavalent Chromium(Cr(VI))	阴性 Negative	/

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
全氟辛烷磺酸盐(PFOS) Perfluorooctane Sulfonates(PFOS)	N.D.	0.5 μg/m²

测试样品/部位描述 金色镀层
Tested Sample/Part Description Golden plating

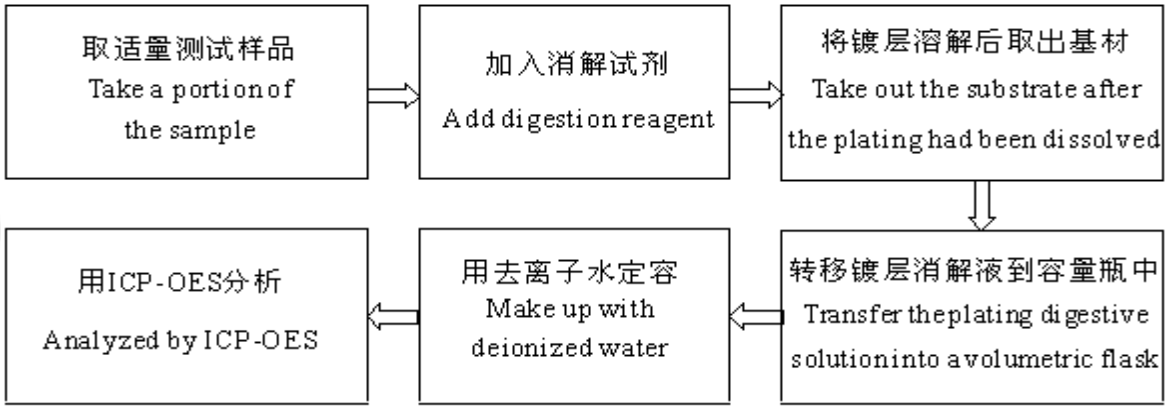
注释: -N.D. = 未检出 (小于方法检测限)
-mg/kg= ppm = 百万分之几
-阴性表示不含有六价铬，即由表面积为50cm2的样品所萃取出来的溶液中的六价铬的浓度小于0.02mg/kg

Note: -MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million
-Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm2 sample surface area used.

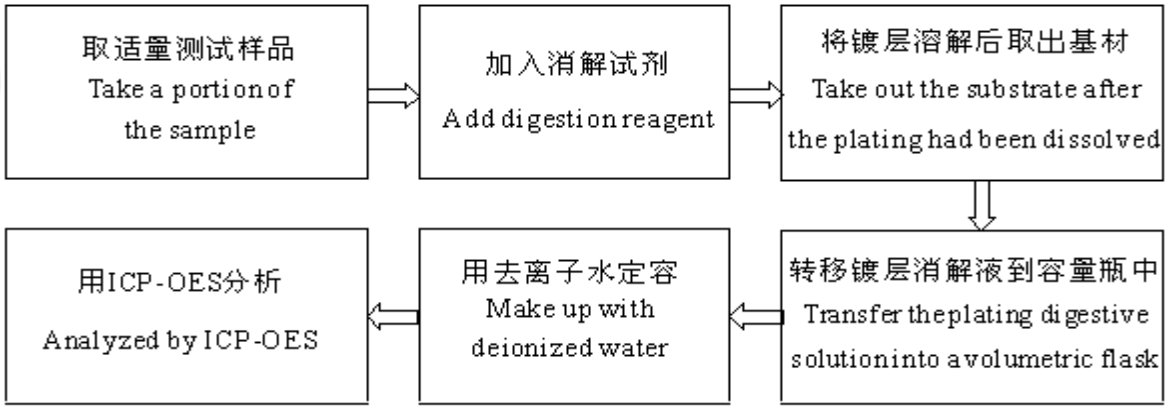
检测报告
Test Report

检测流程 Test Process

1. 铅(Pb)，镉(Cd)
Lead (Pb), Cadmium (Cd)

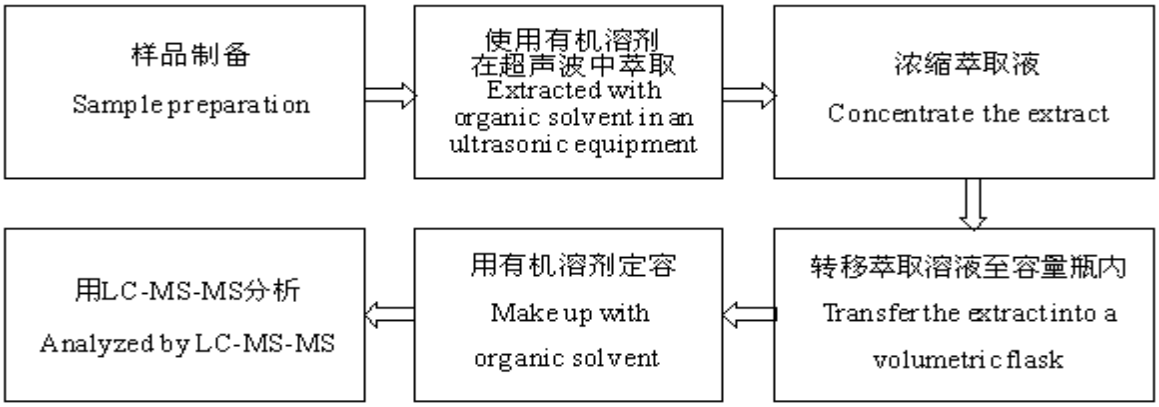


2. 汞(Hg)
Mercury (Hg)

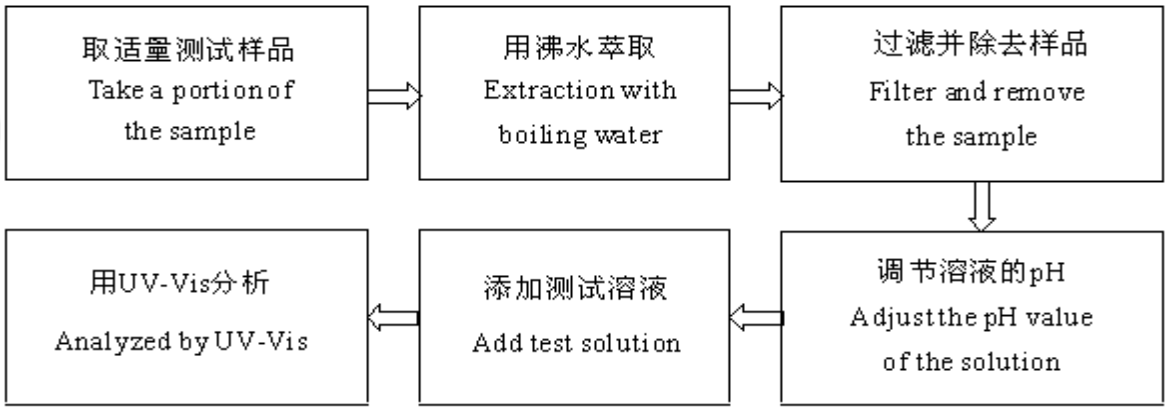


检测报告
Test Report

3. 全氟辛烷磺酸盐(PFOS)
Perfluorooctane Sulfonates(PFOS)

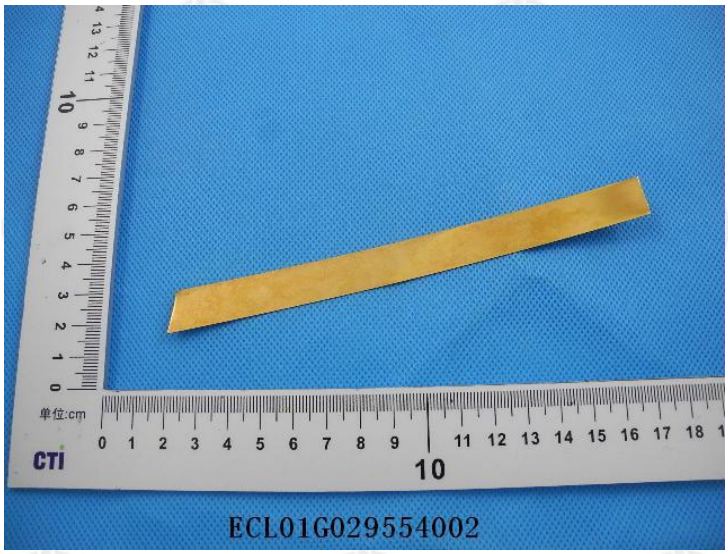


4. 六价铬(Cr(VI))
Hexavalent Chromium(Cr(VI))



检测报告
Test Report

样品图片
Photo(s) of the sample(s)



报告结束
*** End of report ***

检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经CTI书面同意，不得部分复制本报告。
The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can’t be reproduced except in full.