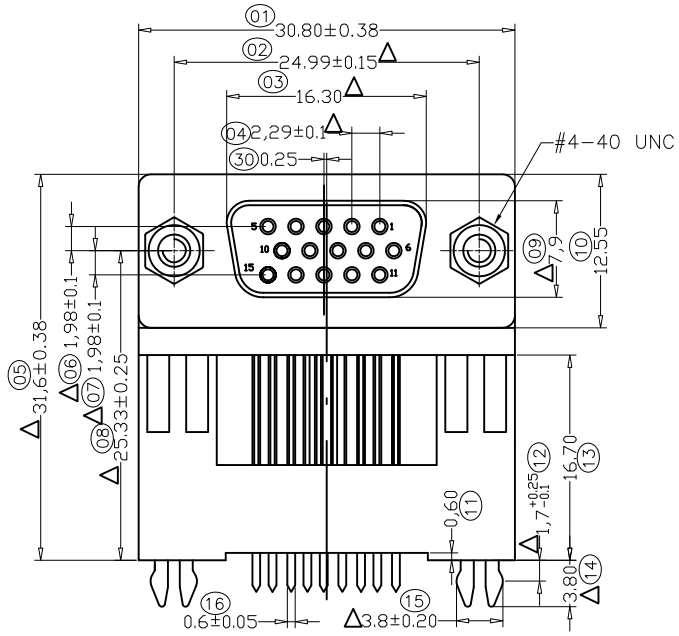
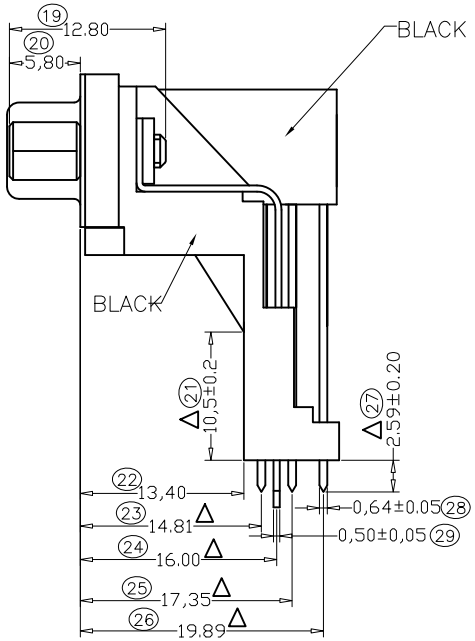
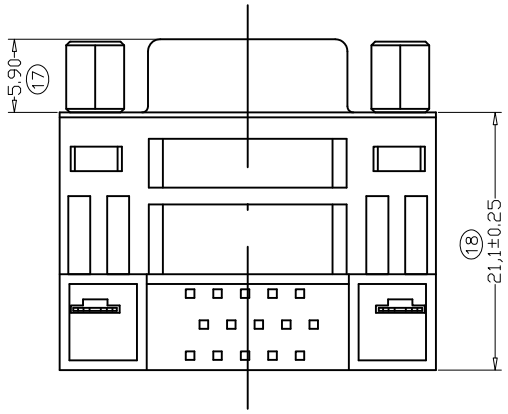
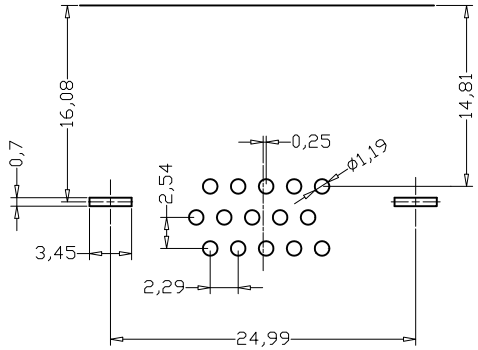
www.dzyjzj.com Tel:0755-27575531 Fax:0755-27576267









RECOMMEND P.C.B. LAYOUT

NOTES:
MATERIALS:
1. INSULATOR:HOUSIN: PBT+30%G/F UL94V-0, COLOR:BLACK
FORK: PBT+30%G/F UL94V-0, COLOR:BLACK
2. CONTACT:BRASS
3. CONTACT PLATED: GOLD PLATING ON CONTACT AREA, 100U″
MIN MATTE TIN PLATED ON SOLDER TAILS
50U″ MIN NICKEL PLATED UNDER OVERALL.
4. SHELL: SPCC-SD, NICKEL PLATING OVER COPPER
5. BOARD LOCK: SPCC-SD, TIN PLATING OVER COPPER
6. RIVET: COPPER ALLOY, NICKEL PLATING
7. SCREW: SPCC-SD, NICKEL PLATING

SPECIFICATION:
1. CONTACT CURRENT RATING: 2 AMP
2. INSULATION RESISTANCE: 1000M OHM MIN AT 500V DC
3. DIELECTRIC WITHSTANDING VOIT: AC 500V(R.M.S)/1 MINUTE
4. OPERATION TEMPERATURE:-55° C TO ±105° C
5. RoHS COMPLIANT

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TOLERANCE: X.X ±0.30, X.XX ±0.25, X.XXX ±0.15, X.° ±2°, X.X° ±0.5°	DRAWED BY : 陈一鸣	DATE : 2014-02-23	PART NAME: HDR-15F 加高铆合式2鱼叉脚
	CHECKED BY: 马跃	DATE : 2014-02-23	PART NO. HYC41-HDR15B-316
UNIT: mm [inch]			MOLD NO.
	APPROVED BY: 邱国夷	DATE : 2014-02-23	DRAW NO: HYC-VGA17030901
SCALE:1:1 SIZE: A4			SHEET NO. 1 OF 1

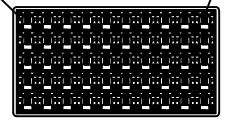
www.dzyjzj.com Tel:0755-27575531 Fax:0755-27576267



HDR15P PBT蓝色 高架 ①

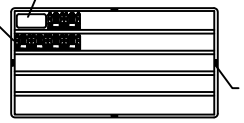
下盘

每盘装40pcs ②

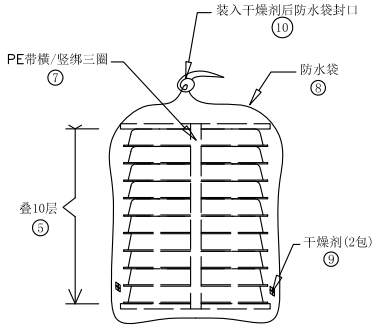


③ 贴标签处(注意产品摆放方向)

上盘



上下盘盖好后,四周
用胶带封好 ④



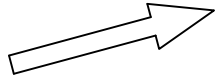
装入干燥剂后防水袋封口 ⑩

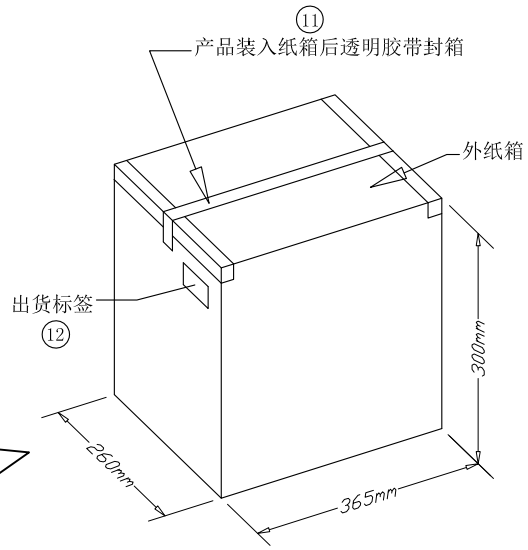
PE带横/竖绑三圈 ⑦

防水袋 ⑧

叠10层 ⑤

干燥剂(2包) ⑨





⑪ 产品装入纸箱后透明胶带封箱

外纸箱

出货标签 ⑫

300mm

260mm

365mm

包装说明:

1. 40PCS/盘;
2. 每盘盖好后用透明胶纸封好;
3. 一般出货盘面不贴标签;
4. 若客户另有贴标签要求，则按其定单注明之要求贴;
5. 每10盘装叠成一叠装入外箱中（套一防水袋，袋内置4包干燥剂）
   一箱装产品总量：400PCS/箱;
6. 产品装入外箱后以封箱透明胶带封箱/绑固;
7. 外箱贴上出货标签;
8. 若客户另有贴标签要求，则按其定单注明之要求贴;
9. 外纸箱规格及材料；365mm*260mm*300mm/K=K
10. 防水袋规格及材料：800mm*700mm*0.05mm/PE
11. 纸板规格及材料：345mm*250mm*5mm/B=B
12. 未满之零数箱需以缓冲材料填满;
13. 本包装适装产品：HDR15P CONNECTOR.
14. 每箱净重7.9Kg,每箱毛重8.9Kg;

深圳市华宇创精密电子有限公司				
TOLERANCE: X.X ±0.30 X.XX ±0.25 X.XXX ±0.15 X.° ±2° X.X° ±0.5°	DRAWED BY : 陈一鸣	DATE : 2014-02-23	PART NAME: 包装图	
	CHECKED BY: 马跃	DATE : 2014-02-23	PART NO.	
	APPROVED BY: 邱国夷	DATE : 2014-02-23	MOLD NO.	
UNIT: mm [inch]			DRAW NO:	
SCALE:1:1 SIZE: A4			SHEET NO.	1 OF 1

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

（适用于D-SUB系列连接器.）

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

（覆盖范围：此规格书内容含盖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 : 100 V AC,DC（额定电压：100V）

2.2 Rated Current:3.0 A（额定电流：3.0A）

2.3 Electric Pressure: Keeping 60 second in AC 1000V/1mA(耐压1000V AC 持续 60 秒）

2.4 Insulation Resistance: 1000 MΩ Min. in DC 500V(绝缘阻最小 1000 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): 20gf/Min.

4.3 Stretching Force(from insulator to pin):0.8Kgf/Min

4.4 Insertion Force(mating connector):9.0Kgf Max;

4.5 Extraction Force(mating connector):0.45Kgf Min

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

5.1Examination 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	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；）	1000MΩ minimum (unmated) （最小为 1000 兆欧）
5.2.3	Dielectric Strength （耐电压）	Unmated connectors, applied AC 1000 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 1000V 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：9.0Kgf Max. 插入力：9 .0Kgf Max.
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：0. 45Kgf Min. 拔出力：0.45Kgf 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：9. 0Kgf Max . 插入力：9.0Kgf Max. 2）Withdrawal Force：0.45Kgf Min. 拔出力：0.45Kgf 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。)

4.4 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℃ EIA-364-26	
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: 50 mΩ Max. （接触阻抗最大50 毫欧） 3）Insulation resistance: 1000 megaohms minimum. （绝缘阻抗最小 1000 兆欧） 4 ） dielectric withstanding Voltage: AC 500V No Breakdown. （耐电压 AC 500V 测试无损坏。）

膜厚類型	測試時間	判定
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	12H	
外部連接 port	24H	
接觸端鍍金(包含 15u"與 15u"以上)	48H	
接觸端鍍金(包含 15u"以下)	24H	

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）
4.4.5	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℃±3℃/1h, second step: 70℃±3℃/1h ,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℃±3℃/1h，第二步：70℃±3 ℃/1h，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: 1000 megaohms minimum. （绝缘阻抗最小 1000 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 245℃±5℃ for 3±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 245℃±5℃的锡炉中 3±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℃±5℃ for 10 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±5℃的锡炉中 10 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）

5.0Test 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		
4.4.7	Resistance to soldering heat(耐焊接热)									2	
4.4.8	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

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TEST REPORT

料号 (Part No)									报告日期 (Date)	2015.08.25		样品数(Sample)	30PCS		
品名 (Part Name)	D-SUB 系列								报告编号 (Report No)						
测试项目 (Test Description)	测试群组(Test Groups)								测试标准 (Test standard)	测试要求 (Test requirement)	测试仪器	仪器有效期	判定 (Judgement)	页次 (Page)	备注 (Note)
	A	B	C	D	E	F	G	H							
外观	1,7	1,7	1,3	1,3	1,3	1,9	1,3	1,3	EIA364-18	无毛边，刮伤，变形;无氧化,发黑	目视	\	OK		
接触阻抗	3,6					2,6			EIA364-23	30mΩ Max.	接触阻抗仪	2016.3.16	OK		
绝缘阻抗		2,5				3,7			EIA364-21	测试电压:500V DC 测试时间:60s 要求:1000MΩ Min.	绝缘阻抗仪	2016.11.16	OK		
耐电压		3,6				4,8			EIA364-20	1000V AC(耐电压) 60s(测试时间) 要求:无击穿和电弧现象.	耐电压仪	2016.3.16	OK		
耐插拔	4								EIA364-09	标准对插件插拔测试500次 测试速度:100±50次/H	耐插拔测试机	免校	OK		
插拔力	2,5								EIA364-13	插入力:9.0Kgf Max. 拔出力:0.45Kgf 插拔速度:25mm/min.	插拔力机	2016.3.16	OK		
盐水喷雾			2						MIL-STD-1344	盐水浓度:5% 喷雾时间:12小时， 要求试验后无发黑.氧化.生锈等现象.	盐雾试验机	2016.3.16	OK		
耐热性				2					EIA364-17	温度:70℃±2℃ 测试时间:96H	程控式恒温恒湿试验机	2016.3.16	OK		
耐寒性					2				EIA364-17	温度:-40℃±2℃ 测试时间:96H	程控式恒温恒湿试验机	2016.3.16	OK		
恒温恒湿		4							EIA364-31	温度:40℃ 湿度:90%-95% 测试时间:96H	程控式恒温恒湿试验机	2016.3.16	OK		
高低温循环						5			EIA364-17	测试温度:第一步:70℃±3℃/1H 第二步: -25℃±3℃/1H 共5个循环 测试时间:共7H	程控式恒温恒湿试验机	2016.3.16	OK		
焊锡性							2		EIA364-52	温度:245℃±5℃ 测试时间:3±0.5s	锡炉	免校	OK		
耐焊接热性								2	EIA364-52	将连接器置于PCB板上,PIN脚浸入260℃±5℃的锡炉中10s; 要求:塑胶不得有明显变形和溶胶现象.	锡炉	免校	OK		
备注(Remark): OK															
核 准:	Zhang								审 核:	————	检 查:		Wei		

深圳市华宇创精密电子有限公司

耐插拔 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	耐插拔测试机	仪器有限期	免校	环境温度	29℃
品名	D-SUB 系列		报告编号					测试群组	GROUPS A	环境湿度	60%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
插拔力测试(Initial) {判定标准:插入力:9.0Kgf Max. 拔出力:0.45Kgf. 速度:25mm/min 单位:Kgf }											
插入力	3.05	2.87	3.03	2.98	3.12						OK
拔出力	0.95	1.05	0.96	0.98	1.07						OK
接触阻抗测试(Initial) {判定标准:30mΩ Max. 单位:mΩ}											
PIN1	4.3	4.1	4.5	4.2	4.5						OK
PIN2	4.5	4.2	4.4	4.4	4.2						OK
PIN3	4.7	4.0	4.6	4.7	4.0						OK
PIN4	4.5	4.4	4.3	4.3	4.7						OK
PIN5	4.1	5.7	4.3	4.3	4.5						OK
PIN6	3.7	3.8	3.4	3.5	3.4						OK
PIN7	3.8	3.5	3.5	3.6	3.4						OK
PIN8	3.4	3.5	3.4	3.8	3.7						OK
PIN9	3.7	3.6	3.6	3.4	3.9						OK
PIN10	3.8	3.6	3.7	3.8	3.5						OK
PIN11	3.4	3.8	3.8	3.5	3.6						OK
PIN12	3.6	3.5	3.5	3.4	3.7						OK
PIN13	3.4	3.6	3.6	3.5	3.8						OK
PIN14	4.0	4.3	4.3	3.6	3.5						OK
PIN15	3.5	3.6	3.7	3.5	3.7						OK
备注(Remark):OK											
核 准:	Zhang		審 核:	————		检验者	Wei				

深圳市华宇创精密电子有限公司

耐插拔 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	耐插拔测试机	仪器有限期	免校	环境温度	27℃
品名	D-SUB 系列		报告编号					测试群组	GROUPS A	环境湿度	55%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
耐插拔测试 {判定标准:用标准对插件以100±50次/H的速度插拔试样500次,符合试样外观要求}											
耐插拔	OK	OK	OK	OK	OK						OK
耐插拔后插拔力测试(Final) {判定标准:插入力:9.0Kgf Max. 拔出力:0.45Kgf. 速度:25mm/min 单位:Kgf }											
插入力	2.94	3.13	3.02	2.98	2.83						OK
拔出力	0.87	0.98	1.05	0.96	1.04						OK
耐插拔后接触阻抗测试(Final) {判定标准:30mΩ Max.单位:mΩ }											
PIN1	4.3	4.1	4.2	4.3	4.4						OK
PIN2	4.0	4.2	4.0	4.0	4.1						OK
PIN3	4.3	4.1	4.2	3.9	3.4						OK
PIN4	4.7	4.3	4.5	4.7	4.3						OK
PIN5	4.8	3.4	4.0	3.6	4.2						OK
PIN6	4.4	3.5	3.7	4.1	3.8						OK
PIN7	5.7	4.9	4.9	4.0	3.9						OK
PIN8	3.6	3.8	4.0	3.6	4.1						OK
PIN9	4.0	3.6	3.4	3.6	4.0						OK
PIN10	3.7	4.1	4.2	4.4	3.5						OK
PIN11	3.8	3.7	3.8	4.0	3.6						OK
PIN12	3.7	3.7	3.9	4.1	3.4						OK
PIN13	3.8	3.8	4.1	3.9	4.1						OK
PIN14	3.7	4.0	4.0	4.0	3.7						OK
PIN15	3.7	3.8	4.0	4.8	4.1						OK
备注(Remark):OK											
核 准:	Zhang		審 核:	————		检验者		Wei			

深圳市华宇创精密电子有限公司

恒温恒湿 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	恒温恒湿试验箱	仪器有限期	2016.3.16	环境温度	29℃
品名	D-SUB 系列		报告编号					测试群组	GROUPS B	环境湿度	60%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
绝缘电阻测试(Initial){测试条件;测试电压:500V DC 测试时间:60s 要求:1000MΩ Min.}											
绝缘电阻	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ						OK
耐电压测试(Initial){测试条件:1000V AC(耐电压) 60s(测试时间) 要求:无击穿和电弧现象.}											
耐电压	OK	OK	OK	OK	OK						OK
恒温恒湿测试{测试条件:温度:40℃ 湿度:90%-95% 测试时间:96H.}											
恒温恒湿	OK	OK	OK	OK	OK						OK
恒温恒湿后绝缘电阻测试(Final){测试条件;测试电压:500V DC 测试时间:60s 要求:1000MΩ Min.}											
绝缘电阻	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ						OK
恒温恒湿后耐电压测试(Final){测试条件:500V AC(耐电压) 60s(测试时间) 要求:无击穿和电弧现象.}											
耐电压	OK	OK	OK	OK	OK						OK

备注(Remark):OK

核 准:	Zhang	審 核:	————	检验者	Wei

深圳市华宇创精密电子有限公司

盐水喷雾 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	盐雾测试机	仪器有限期	2016.3.16	环境温度	28℃
品名	D-SUB 系列		报告编号					测试群组	GROUP C	环境湿度	60%RH
样品 / 项目	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
盐雾测试前试样外观:无生锈;无氧化现象.(镀金部分)											
判定	OK	OK	OK	OK	OK						OK

实 验 记 录

项 目	试 验 要 求	实 测 数 据
氯化钠溶液浓度	5%	5%
PH 值	6.5~7.2	6.7-7.2
压缩空气压力(kgf/cm²)	1.00±0.01	1.0
喷雾量(ml/80cm²/h)	1.0~2.0	1.7
压力桶温度(℃)	47℃±1.0℃	47.3
盐水桶温度(℃)	35℃±1.0℃	35.5
试验室温度(℃)	35℃±1.0℃	35.7
试验室相对湿度	≥85%RH	89%
试 验 时 间 (H)	24H	24H

盐雾测试后试样外观:无生锈;无氧化现象.(镀金部分)											
判定	OK	OK	OK	OK	OK						OK

备注(Remark):OK

核 准:	Zhang	審 核:	————	检验者	Wei

深圳市华宇创精密电子有限公司

耐热性 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	恒温恒湿试验箱	仪器有限期	2016.3.16	环境温度	30℃
品名	D-SUB 系列		报告编号					测试群组	GROUPS D	环境湿度	55%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
耐热性测试 {测试条件:温度:70℃±2℃ 测试时间:96H. 要求:塑胶无变形;端子无发黄氧化现象}											
耐热性	OK	OK	OK	OK	OK						OK

深圳市华宇创精密电子有限公司

耐寒性 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	恒温恒湿试验箱	仪器有限期	2016.3.16	环境温度	27℃
品名	D-SUB 系列		报告编号					测试群组	GROUPS E	环境湿度	50%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
耐寒性测试 {测试条件:温度:-40℃±2℃ 测试时间:96H. 要求:塑胶无变形;端子无发黄氧化现象}											
耐寒性	OK	OK	OK	OK	OK						OK

深圳市华宇创精密电子有限公司

高低温循环 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	恒温恒湿试验箱	仪器有限期	2016.3.16	环境温度	28℃
品名	HD-SUB 系列		报告编号					测试群组	GROUPS F	环境湿度	57%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
接触阻抗测试(Initial) {判定标准:30mΩ Max. 单位:mΩ}											
PIN1	4.2	4.5	4.1	4.5	4.2						OK
PIN2	4.2	4.6	4.2	4.2	4.4						OK
PIN3	4.1	4.8	4.0	4.0	4.7						OK
PIN4	3.7	3.9	3.8	3.7	3.8						OK
PIN5	3.6	4.0	4.4	3.6	4.3						OK
PIN6	4.0	4.1	4.1	4.0	4.2						OK
PIN7	4.0	3.6	3.9	4.0	4.2						OK
PIN8	3.7	3.8	4.0	3.7	4.1						OK
PIN9	3.6	3.4	3.4	3.6	3.8						OK
PIN10	4.1	3.8	4.1	4.1	4.0						OK
PIN11	3.9	4.1	4.0	3.9	3.5						OK
PIN12	3.7	3.5	3.7	3.7	4.0						OK
PIN13	3.8	3.5	3.4	3.8	3.6						OK
PIN14	3.7	3.8	3.8	3.7	3.6						OK
PIN15	3.6	3.8	4.1	3.6	3.6						OK
绝缘电阻测试(Initial){测试条件;测试电压:500V DC 测试时间:60s 要求:1000MΩ Min.}											
绝缘电阻	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ						OK
耐电压测试(Initial){测试条件:1000V AC(耐电压) 60s(测试时间) 要求:无击穿和电弧现象.}											
耐电压	OK	OK	OK	OK	OK						OK
高低温循环测试{测试条件:温度:第一步:70℃±3℃/1H 第二步:-25℃±3℃/1H 共5个循环 测试时间:共7H}											
高低温循环	OK	OK	OK	OK	OK						OK
备注(Remark):OK											
核 准:	Zhang		審 核:	————		检验者		Wei			

深圳市华宇创精密电子有限公司

高低温循环 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	恒温恒湿试验箱	仪器有限期	2016.3.16	环境温度	28℃
品名	HD-SUB 系列		报告编号					测试群组	GROUPS F	环境湿度	57%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
高低温循环后接触阻抗测试(Final){判定标准:30mΩ Max. 单位:mΩ}											
PIN1	4.5	4.1	4.1	3.3	4.0						OK
PIN2	4.6	3.9	3.9	4.0	4.0						OK
PIN3	4.4	4.3	4.0	4.2	3.7						OK
PIN4	4.1	3.6	3.8	3.5	3.7						OK
PIN5	4.3	4.0	3.7	4.1	3.6						OK
PIN6	3.5	3.9	3.3	3.6	4.1						OK
PIN7	3.5	3.5	4.4	3.6	3.6						OK
PIN8	3.8	3.7	3.8	4.0	3.6						OK
PIN9	3.7	3.7	3.9	4.1	3.4						OK
PIN10	3.8	3.8	4.1	3.9	4.1						OK
PIN11	3.8	3.5	3.4	3.9	3.6						OK
PIN12	3.9	4.1	4.1	3.7	4.1						OK
PIN13	3.6	3.4	4.0	3.5	3.9						OK
PIN14	4.1	3.8	3.7	4.0	3.7						OK
PIN15	3.8	3.9	3.4	3.7	3.8						OK
高低温循环后绝缘电阻测试(Final) {测试条件;测试电压:500V DC 测试时间:60s 要求:1000MΩ Min.}											
绝缘阻抗	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ	>1000MΩ						OK
高低温循环后耐电压测试(Final){测试条件:500V AC(耐电压) 60s(测试时间) 要求:无击穿和电弧现象.}											
耐电压	OK	OK	OK	OK	OK						OK
备注(Remark):OK											
核 准:	Zhang		審 核:	————		检验者	Wei				

深圳市华宇创精密电子有限公司

焊锡性 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	锡炉	仪器有限期	免校	环境温度	29℃
品名	HD-SUB 系列		报告编号					测试群组	GROUPS G	环境湿度	60%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
焊锡性测试 {测试条件:245℃±5℃ (温度), 3±0.5s (测试时间) 要求:着锡饱合面积90% Min.}											
焊锡性	>90%	>90%	>90%	>90%	>90%						OK

深圳市华宇创精密电子有限公司

焊锡耐热性 TEST REPORT

料号			测试日期	2015.08.25		测试仪器	锡炉	仪器有限期	免校	环境温度	29℃
品名	D-SUB 系列		报告编号					测试群组	GROUPS H	环境湿度	60%RH
样品(Sample) / 项目(Item)	样品1	样品2	样品3	样品4	样品5						判定(Judgement)
焊锡耐热性测试 {测试条件:将连接器置于PCB板上,PIN脚浸入260℃±5℃的锡炉中10s; 要求:塑胶不得有明显变形和溶胶现象.}											
焊锡耐热性	OK	OK	OK	OK	OK						OK

膜厚测试报告

品　名：D-SUB 端子
规　格：SN100U″/NI50U″
操作员：张瑞平

数据组编号；			11		2015/9/15	08:36:19
n= 1	SN=	111.6	μ″	NI=	59.58	μ″
n= 2	SN=	120.3	μ″	NI=	59.54	μ″
n= 3	SN=	115.5	μ″	NI=	56.36	μ″
n= 4	SN=	110.7	μ″	NI=	55.23	μ″
n= 5	SN=	115.8	μ″	NI=	57.11	μ″

XRAY XULM

数据组编号：	11		数据组结果		2015/9/15	08:39:21
产品：	Ni/Cu					

		SN		NI	
平均值	X.：	112.2	μ″	58.36	μ″
测量时间	:	10 S			
标准偏差	s:	2.417	μ″	3.389	μ″
C.O.V [%]	V:	2.17%		6.23%	
读数数量	n:	5		5	
范围	R:	6.5	μ″	8.96	μ″
最低读数	:	110.7	μ″	55.23	μ″
最高读数	:	120.3	μ″	59.58	μ″

膜厚测试报告

品　名：D-SUB　雙叉
规　格：SN100U″/NI50U″
操作员：张瑞平

数据组编号；			11	2015/9/15	08:35:11
n= 1	SN=	108.6	μ″	NI=	50.58 μ″
n= 2	SN=	110.3	μ″	NI=	59.54 μ″
n= 3	SN=	111.5	μ″	NI=	52.36 μ″
n= 4	SN=	110.5	μ″	NI=	55.23 μ″
n= 5	SN=	115.1	μ″	NI=	54.11 μ″

XRAY　XULM

数据组编号：	11	数据组结果		2015/9/15	08:39:21
产品：	Ni/Cu				

		SN		NI	
平均值	X.：	111.2	μ″	54.36	μ″
测量时间	：	10	S		
标准偏差	s:	2.417	μ″	3.389	μ″
C.O.V [%]	V:	2.17%		6.23%	
读数数量	n:	5		5	
范围	R:	6.5	μ″	8.96	μ″
最低读数	：	108.6	μ″	50.58	μ″
最高读数	：	115.1	μ″	59.54	μ″

膜厚测试报告

品　名：D9S沉孔鐵殼 鍍鎳
规　格：CU60u″/Ni80u″
操作员：付正辉

数据组编号；		11		10:35:11	
n= 1	Ni=	85.5	μ″	Cu=	65.1 μ″
n= 2	Ni=	89.4	μ″	Cu=	68.6 μ″
n= 3	Ni=	84.2	μ″	Cu=	63.1 μ″
n= 4	Ni=	86.1	μ″	Cu=	65.5 μ″
n= 5	Ni=	88.6	μ″	Cu=	69.3 μ″

XRAY XULM
数据组编号： 11 数据组结果 10:37:21
产品： Ni/Cu/Fe

		Ni	Cu
平均值	X.：	86.76 μ″	66.32 μ″
测量时间	:	10 S	
标准偏差	s:	2.176 μ″	2.579 μ″
C.O.V [%]	V:	2.51%	3.89%
读数数量	n:	5	5
范围	R:	6.4 μ″	6.20 μ″
最低读数	:	84.2 μ″	63.1 μ″
最高读数	:	89.4 μ″	69.3 μ″

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佛山市高明基业冷轧钢板有限公司

GAOMING FOUNDATION COLD ROLLED STEEL SHEETS INDUSTRY CO.LTD

兆基

产品质量证明书

INSPECTION CERTIFICATE

订货单位 CUSTOMER				证书号 CERTIFICATENO.	ZJ20120807000 1
收货单位 PURCHASER				合同号 CONTRACTNO.	
产品名称 PRODUCT	冷轧钢带	钢 号 STEEL. GRADE	STI4-D	交货日期 Date Of Delivery	2014-2-13
标 准SPECIFICATION	Q/HJY1	交货状态 STATE OF DEL	经过热处理	签发日期 Date Of ISSUE	2014-2-13

序号	钢卷号 COIL NO.	规格及重量 MATERIAL DESCRIPTION				化学成分CHEMICALCOMPOSITITION(%) 熔炼分析 HEAT ANALYSIS							拉力试验 TENSILE TEST (G.L=L²)					弯曲试验 180°	硬度试验 *04	备注 REMARKS
		厚度 THICK	宽度 WIDTH	长度LENGTH	重量	C	Si	Mn	P	S	Alt		屈服 Y.S	抗拉 T.S	伸长EL	铁损	锌层重量			
		mm			(kg)	x10⁻³	x10⁻²	x10⁻²	x10⁻³	x10⁻³	x10⁻³		Mpa		%	w/kg	g/m²			
1	13A7-167-2	0.3	1250	C	7810	2	1	17	10	7	46		165.1	348.5	40	0	0	合格	83	
2	13A7-1287-1	0.35	1250	C	8563	2	1	16	8	6	41		147.3	298.4	45.1	0	0	合格	85	
3																				
4																				
5																				
6																				
7																				
合计 (TOTal)					7810															

注释 NOTES

Y.S.=YIELD STRENGTH T.S=TENSILE STRENGTH EL=ELONGATION G.L=GAUGE LENGTH L1=5.65SQRT(F0) L2=50MM L3=80MM L4=200MM
L5=11.3SQRT(F0) *01:HRB *02:HRF *03:HR30T *04:HV *05:HR15T *06:ERICHSEN

会验者 SURVEYOR TO

本产品已按上述要求进行制造和检验，其结果符合要求，特此证明。
WE HEREBY CERTI FY THAT MATERI AL DESCRI BED HEREI N HAS MANUFACTURED AND TESTED WI TH SATI SFACTORY RESULTS IN ACCORDANCE WITH THE REQUI REMENTS OF THE ABOVE MATERI AL . SPECI FI CATI ON.

质检员 CHECKER	复核 RECONFIRMATION
田士张	

东莞市创鑫金属有限公司

产品质量保证书

METERIAL CERTIFICATION REPORT

客户名称:
CUSTOMER

牌号 Grade	规格 Dimension	状态 Temper	重量 Weight	件数 Piece	生产批号 Batch NO.
C2680	0.2	EH			Y45481-5
试验项目	抗拉强度 STR	延伸率 %	维氏硬度 Hardness	杯突深度 Deeppush	日期 Date
	455	18	178	/	2014-11-22

化学成分	元素	Cu%	Pb	Fe%	P	Zn
	标准	63.5-68	0.03	<0.1	<0.01	余量
	实测值	64.20	0.0048	0.029		余量

执行标准 STANDARD	GB/T5231	检验员:吴正源 INSPECTOR

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质保专用章

浙江元立金属制品集团有限公司
ZHEJIANG YUANLI METAL PRODUCT GROUP CO.,LTD
浙江.遂昌.二都街 邮编：323300
Erdu Street, SuiChang. Zhejiang, P.R.CHINA
FAX：(0578)8185148

产品质量证明书
Product Quality Certificate

订货单位 Purchaser	杭州凯业金属材料有限公司	钢号 Steel Grade	ML08AL	质证书号 Certification	6465
产品名称 Product Name	无扭控冷热扎盘条	总重量 Totall Weight	59.37T	签发日期 Date of Delivery	2016.03.9
执行标准 Standard	GB/T6478-2001	交货状态 Delivery Condition	热轧	出库单号 Delivery NO.	0005107

序号	炉批号 Heet NO.	规格 (mm) SIZE	件数 QTY	钢号 Steel Grade	化学成份 Chemical Composition %														低倍组织（级）			离淬火端硬度值（HRC）	
					C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Al	Ti	V	Nb	W	B	一般疏松	中心疏松	偏析	9mm	15mm
1																								
2	B15120231	65	27	ML08AL	0.07	0.04	0.33	0.018	0.007	0.055	0.011	0.002	0.012	0.053	0.001	0.001		0.001						
3																								
4																								
5																								
6																								
7																								

序号	物理性能Physical Capability						顶锻 Upsetting		显微组织 Microstructure		带状组织（级）	碳化物（级）			非金属夹杂物(级)Non Metallic inclusion								冷弯 180°	备注
															A类		B类		C类		D类			
	Rel/Rp0.2 (Mpa)	Rm (Mpa)	A (%)	Z (%)	Akv (J)	热轧硬度 (HRB)	热 (1/3)	冷 (1/4)	晶粒度 (级)	脱碳层 (mm)		网状	带状	液析	粗系	细系	粗系	细系	粗系	细系	粗系	细系		
1																								
2	230	342	41	76				完好																
3																								
4																								
5																								
6																								
7																								

说明

1. 材料的表面质量和外形尺寸均合格，酸浸低倍组织中白点、宏观夹杂等标准规定不允许有的缺陷，均保证符合标准出厂.Dimensions and surfaces are qualified. No defect in the macrostructure of steels. Hereby certify that all is in accordance with relevant standard.
2. 有异议时，来函请标明钢号、炉号、规格、发货单号、原因，提供质量证明书，并将实物保管好.If there is any objection, please provide, Steel grade, Heet NO, dimension, Delivery NO., reasons and quality certificate. Please keep the products original.
3. 建议按生产日期15天后使用 Please use after 15 days of the production date.

质检印章 SEAL

检证人 VISA
林慧红

KINGFA®金发

PBT-RG301

阻燃增强聚对苯二甲酸丁二醇酯 Reinforced & Flame Retardant PBT

主要特征 FEATURES	主要应用 APPLICATIONS
• 阻燃 • 高机械强度 • 高耐温性 • 电气性能好 • 不喷霜	• 注塑成型 • 家电部件 • 线圈骨架 • 照明灯具 • 继电器 • 连接器

性 能[1] Properties	测试标准 ASTM	测试条件 Test Condition	国际单位 S.I. Units	典型值 S.I.[2] Typical Values
机械性能 Mechanical				
拉伸强度 Tensile Strength	D638	10mm/min	MPa	120
伸长率 Elongation at break	D638	10mm/min	%	2.6
弯曲强度 Flexural Strength	D790	2mm/min	MPa	190
弯曲模量 Flexural Modulus	D790	2mm/min	MPa	9000
悬臂梁缺口冲击强度 Impact Strength, IZOD notched	D256	3.2mm, 23℃	J/m	80
洛氏硬度 Rockwell Hardness	D785	R-Scale	-	120
热 性 能 Thermal				
热变形温度 Heat Distortion Temp.	D648	0.45MPa, 6.4mm	℃	220
		1.8MPa, 6.4mm	℃	210
电性能 Electrical				
体积电阻率 Volume Resistivity	D257	-	Ω· cm	10^{16}
其 他 Others				
比重 Specific Gravity	D792	23℃	g/cm^3	1.64
玻纤含量 Glass Fibre Content	-	-	%	30
收缩率 Mold Shrinkage	D955	23℃	%	0.3/0.9
吸水率 Water Absorption	D570	23℃,24hr	%	0.07
阻燃性 Flammability	UL94	0.75mm	Class	V-0
		3.0mm	Class	V-0

[1] 染色料的性能可能与以上数值有不同。

[2] 典型值是指实验室平均数据，仅用于使用时的参考，不作为产品的标准。

典型加工条件 Processing Conditions

		典型值 Start Point	范围 Range
熔体温度 Melt Temp.		250℃	240-260℃
料筒温度 Barrel Zone Temp.	后段, Rear	235℃	220-240℃
	中段, Center	245℃	235-255℃
	前段, Front	255℃	240-265℃
模具温度 Mold Temp.		60℃	50-70℃
加工温度上限 Processing Temp. Limit		265℃	
注塑速度 Injection Speed		中速到高速 Moderate to high	
预干燥 Pre-Dry Requirements		120～140℃, 4～6hr	

以上数值仅供注塑机参考使用，可根据不同机型、不同模具以及产品要求，对上述工艺做适当调整

安全及处理注意事项

客户可向当地的金发办事处索取本产品的材料安全数据表（MSDS）。客户从 MSDS 中可得到材料处理、安全和弃置方面的资料，以及当地适用的健康和安全规定的要求。下面所述只是一般注意事项，仅适用于所提供的树脂。用于塑料成型的各类添加剂和加工助剂，以及用于二次加工工序的其它材料有其自身的安全要求，因此必须分别去了解。

本产品的毒性极低，在正常条件下使用时，人体吸入、眼部及皮肤接触都没有特别问题。不过，在处理、储存、使用或弃置这些树脂时仍须谨慎小心。工作场所应保持整洁，以避免粉尘聚积。在加工操作中，应尽量避免接触熔融的树脂。

塑料树脂产品在制造过程会产生粉尘和气体。对注塑制件进行锯、锉、打磨等操作时产生的粉尘可能会刺激眼睛和上呼吸道。在多尘的生产环境中，建议操作工人使用经有关部门认可的呼吸器或面罩。

按正确操作规程要求，塑料加工区应有良好的通风。塑料在加工过程中超过熔融温度时会释放出含有分解物质的烟雾，此类烟雾可能具刺激性。在大多数情况下，一般良好的通风设备便已足够。当有需要时，应使用局部抽气通风方法。

如在工作中会接触到飞扬的微粒而对眼睛造成伤害时，便要配戴防化护目镜。处理本树脂时，若有需要，可戴上隔热手套作保护。

该产品在紫外线作用下会有发黄现象，因此产品存储时应避免太阳光直接照射。

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广州金发科技股份有限公司
技术部
广州天河区柯木塑高唐工业区
中国 广州 510520

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东莞市诺保信塑胶制品有限公司

物性表

成品规格：PBT加纤30%

PBT特性：本产品具有优良之耐化学性，耐候性，电器特性；
结晶快，易成型；耐热性好.

性能 PROPERTY	测试方法 METHOD	单位 UNITS	参数 INDEX
玻璃含纤 PERXENT OF FIBRE-GALSS	燃烧法	%	30
比重 SPECIFIC GRAVITV	ASTMD-792	-	1.65
模收缩率 MOLD SHRTNDAGE	ASTMD-955	%	0.3-0.5
热变形温度 HEAT DISTORTIONTEMPERATURE	ASTMD-648	℃	225
拉伸强度 TENSILS YIELD STRENGTH	ASTMD-638	kg/cm^2	95
含水率 WATER ABSORPTION	ASTMD	%	0.15
伸长率 ELONGATION AT BREAK	ASTMD-638	%	5.5
弯曲强度 FLEXURAL STRENGTH	ASTMD-790	kg/cm^2	120
缺口冲击强度 IZOD IMPAXT STREHGTH	ASTMD-256	kgcm/cm	8.0
燃烧性 FLAMMABILITY	U.L-94	-	V_0
洛氏硬度 ROCK WLL HARDNESS	ASTMD-785	R Scale	120
介电常数 DLELCTRIC CONSTANT	ASTMD-150	-	3.5
介电强度 DLELECTRIC STRENGTH	ASTMD-149	Kv/mm	20

审核:PERTER　　制单人:　韦光辉

ONLINE CERTIFICATIONS DIRECTORY

QMFZ2.E323954
Plastics - Component

Additional information regarding this certification can be found in UL's iQ Family of Databases (iq.ul.com).

NEW -- for additional information concerning the individual material, click on the material designation.

Page Bottom

Plastics - Component

See General Information for Plastics - Component

DONG GUAN NUO BAO XIN PLASTIC CO LTD **E323954**
GUANZHOU INDUSTRY ZONE
WANG NIU DUN TOWN
DONGGUAN, GUANGDONG 523215 CHINA

									H	D	
		Min.		H	H	RTI			V	4	C
		Thk	Flame	W	A	Elec	Mech		T	9	T
Material Dsg	Color	mm	Class	I	I		Imp	Str	R	5	I
Polybutylene Terephthalate (PBT), glass reinforced, furnished as pellets.											
301-G25	NC, BK	3.0	V-0	-	-	75	75	75			

Marking: Company name and material designation on container, wrapper or finished part.

Last Updated on 2008-12-04

Questions? **Print this page** **Notice of Disclaimer** **Page Top**

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Test Report

SHENZHEN ZHONGCHENG TECHNOLOGY CO.,LTD

142 SONG YU ROAD ,HONHXING VILLAGE ,SONGGANG TOWN ,BAO'AN SHENZHEN
CHINA

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

SGS Job No. :	CP16-077537 - SZ
Date of Sample Received :	26 Dec 2016
Testing Period :	26 Dec 2016 - 30 Dec 2016
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Nana

Nana Zhang
Approved Signatory

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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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	CAN16-255361.002	White plastic material

Remarks :

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

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 Colorimetric Method using UV-Vis.
(5)With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
(6)With reference to IEC 62321-8:2013 (111/321/CD) , determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	*002*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	7
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND

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

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Test Item(s)	Limit	Unit	MDL	*002*
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

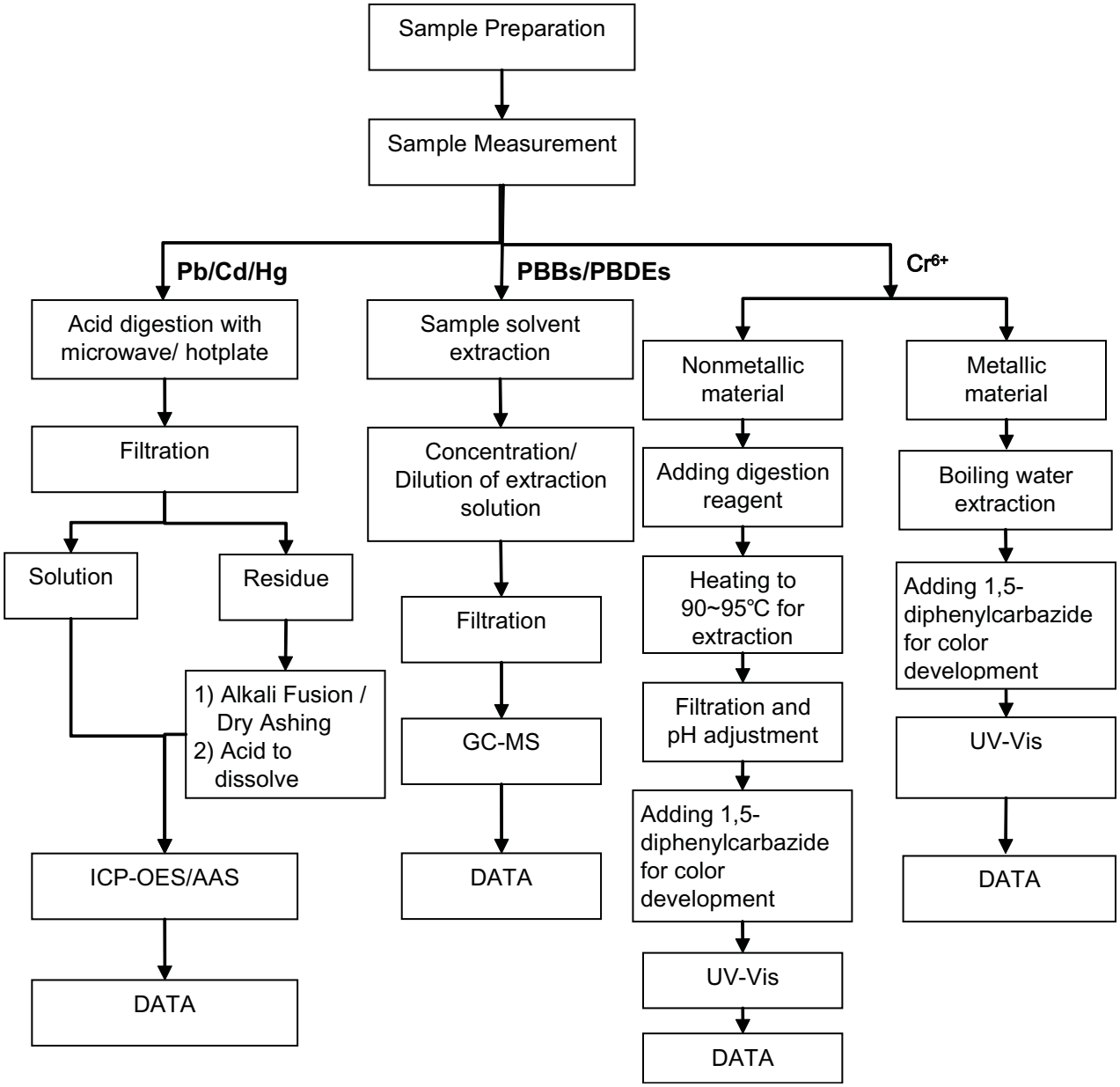
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Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Edith Zhang / Sunny Hu
2) Name of the person in charge of testing: Bella Wang / Qiong Liu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).

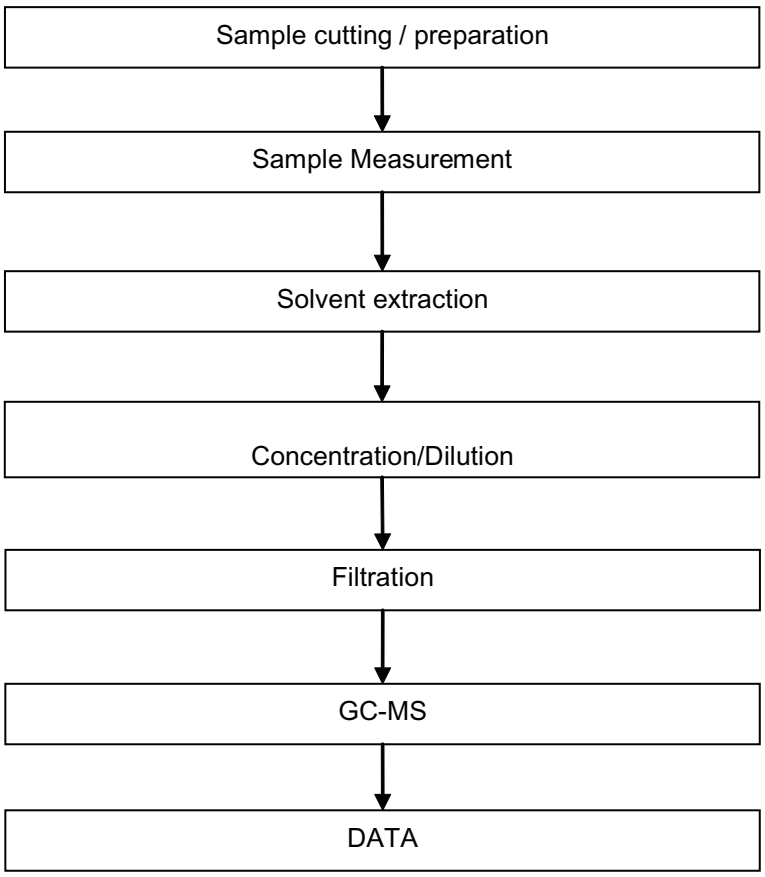


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Phthalates Testing Flow Chart

1) Name of the person who made testing: Sunny Hu
2) Name of the person in charge of testing: Qiong Liu



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Sample photo:



CAN16-255361.002

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Test Report

Report No. SCL01I026789001R1

Applicant SHENZHEN DONGWU PRECISION HARDWARE CO., LTD.

Address BAOAN DISTRICT CITY, SONGGANG CITY, SHENZHEN STREET RED STAR COMMUNITY LONGMEN FIELD INDUSTRIAL ZONE NO. 3

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

Sample Name	色粉
Part No.	R69白 EBS扩散粉
Client Reference Information	R-OB-1增白粉；5120黑；2114黄；3YD黄；F/8G黄；HLR黄；GG橙；60#橙；HG钛青兰；RS6兰；79#兰；HFG红；EG 红；E2G红；53#紫；13#紫；K8730 绿
Sample Received Date	Apr. 11, 2016
Testing Period	Apr. 11, 2016 to Apr. 14, 2016

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), Phthalates(DBP, BBP, DEHP, DIBP), Chlorine(Cl), Bromine(Br), Hexabromocyclododecane (HBCDD), Phthalates 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 Tony Gong

Reviewed by Emma Xiao

Approved by

Danny Liu
Technical Manager

Date Apr. 15, 2016

No. R228415981

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 Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates(DBP, BBP, DEHP, DIBP)	Refer to EN 14372:2004(E)	GC-MS
Chlorine(Cl)	Refer to BS EN 14582:2007	IC
Bromine(Br)	Refer to BS EN 14582:2007	IC
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270D:2007	GC-MS
Phthalates	Refer to EN 14372:2004(E)	GC-MS

Test Report

Test Result(s)

Tested Item(s)	Result	MDL
Lead (Pb)	7 mg/kg	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 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

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

Test Report

Tested Item(s)	Result	MDL
Phthalates		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butylbenzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-2-ethylhexyl phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg

Tested Item(s)	Result	MDL
Halogen(s)		
Chlorine(Cl)	226 mg/kg	10 mg/kg
Bromine(Br)	N.D.	10 mg/kg

Tested Item(s)	Result	MDL
Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Phthalates		
Dipentyl phthalate(DPP) CAS#:131-18-0	N.D.	50 mg/kg
Di-n-octyl phthalate(DNOP) CAS#:117-84-0	N.D.	50 mg/kg
Diisononyl phthalate(DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
Diisodecyl phthalate(DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg

Tested Sample/Part Description Blue powder

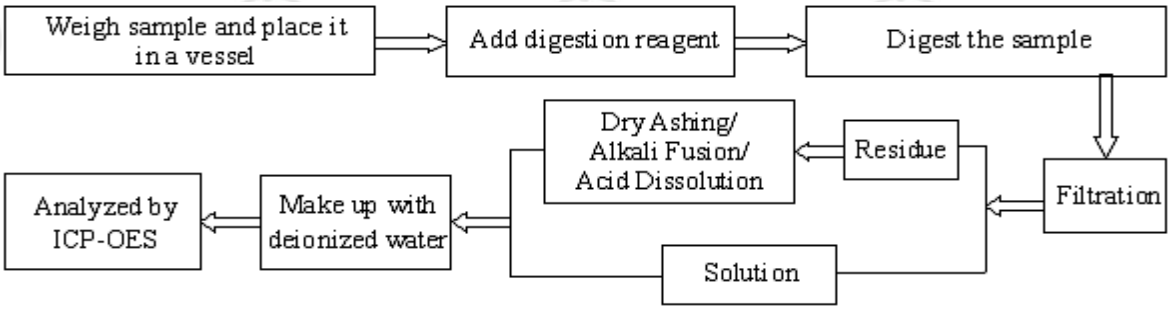
Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

Note: **This testing report displaces the original report of No. SCL01I026789001 and the original one No. SCL01I026789001 was invalid since the date of this testing report released.**

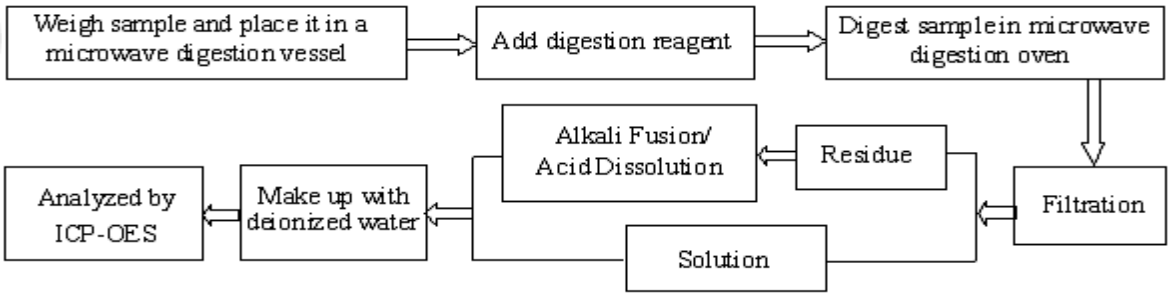
Test Report

Test Process

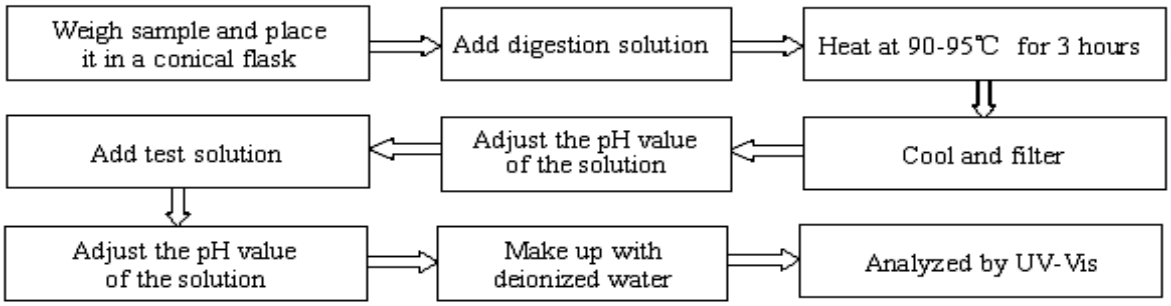
1. Lead (Pb), Cadmium (Cd)



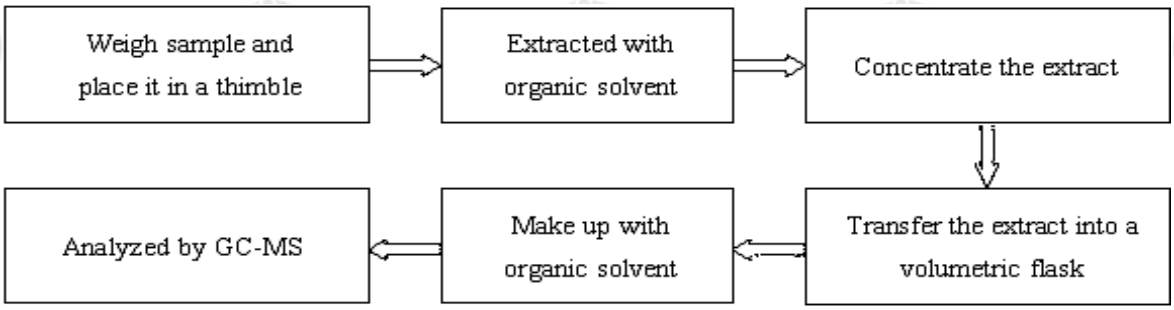
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))

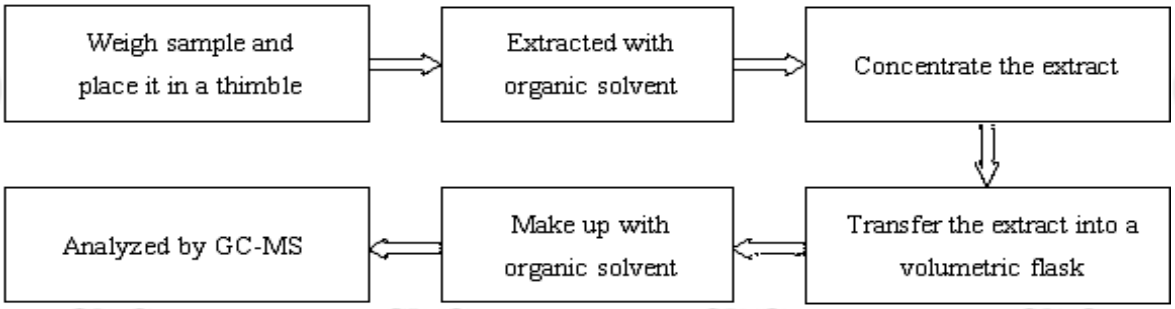


4. Polybrominated Biphenyls(PBBs) , Polybrominated Diphenyl Ethers(PBDEs)

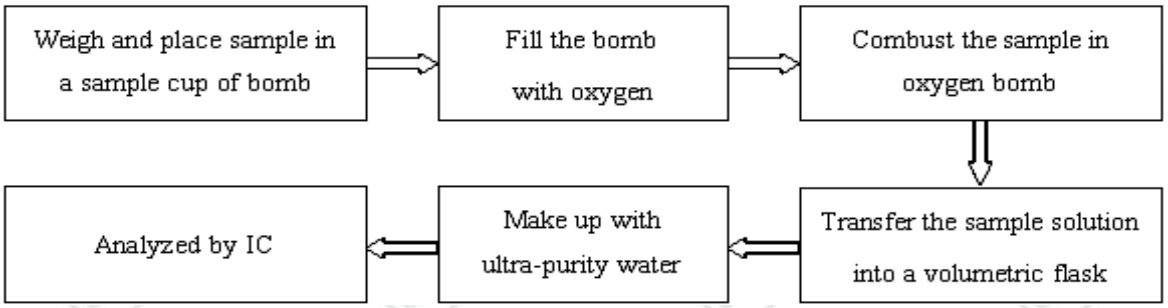


Test Report

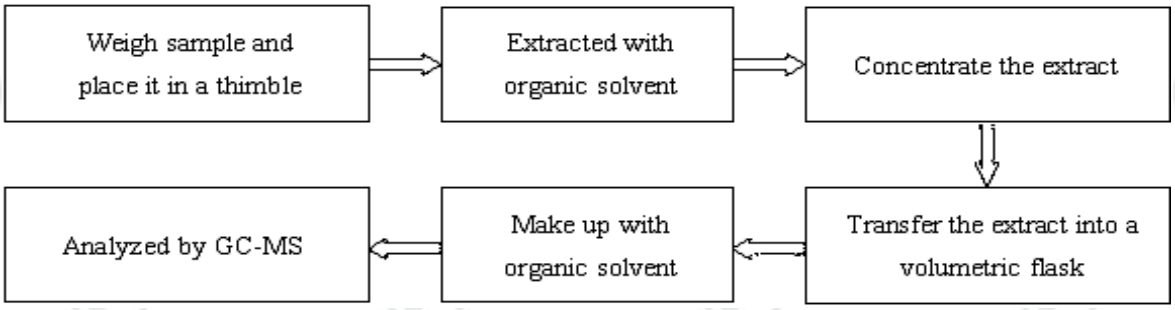
5. Phthalates, Phthalates(DBP, BBP, DEHP, DIBP)



6. Bromine(Br), Chlorine(Cl)

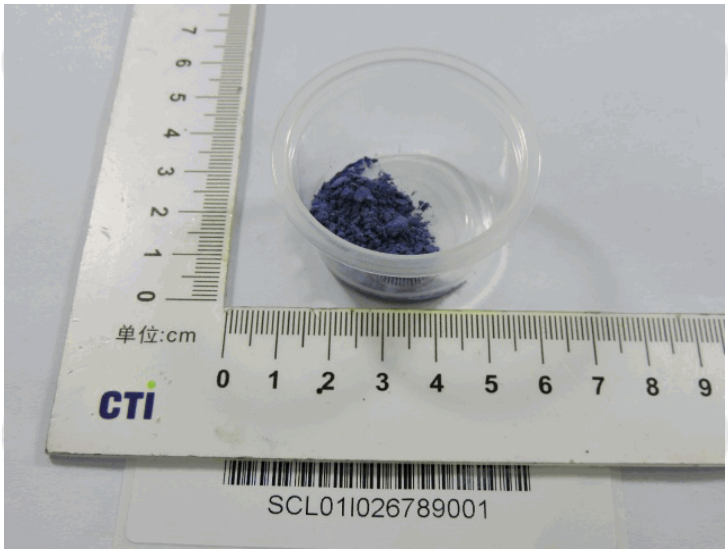


7. Hexabromocyclododecane (HBCDD)



Test Report

Photo(s) of the sample(s)



*** End of report ***

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Attached Page

Client Reference Information

序号	样板编号混合物	颜色
1	R69 白	白色
2	5120 黑	黑色
3	2114；3YD；F/8G；HLR	黄色
4	GG；60#	橙色
5	HG；RS6；79#	蓝色
6	HFG；EG；E2G	红色
7	53#；13#	紫色
8	K8730	绿色

Test Report

DONGGUAN GANXING HARDWARE CO.,LTD

NO.18,BUILDING 22,JINMING INDUSTRY MOULD CITY,NO.33 FUXING ROAD XIAGANG CHANGAN TOWN,DONGGUAN CITY
CHINA

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

SGS Job No. :	CP15-020873 - GZ
Date of Sample Received :	20 Apr 2016
Testing Period :	20 Apr 2016 - 23 Apr 2016
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

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

Echo

Echo Yeung
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Chemical Laboratory
检测专用章 Testing Service

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN15-060429.004	Brassy metal sheet

Remarks :

(1) 1 mg/kg = 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	*004*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	9
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.

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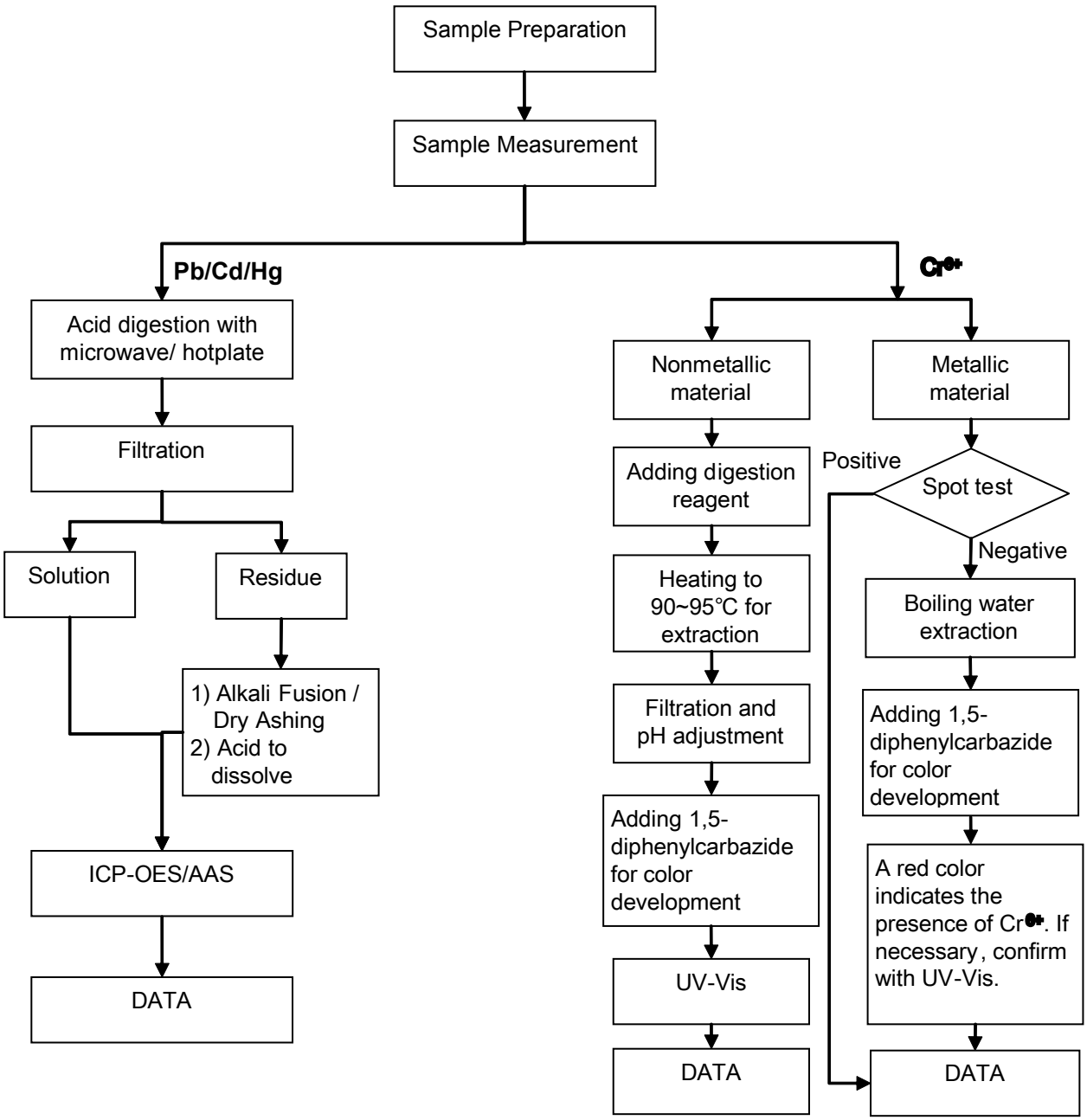
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RoHS Testing Flow Chart

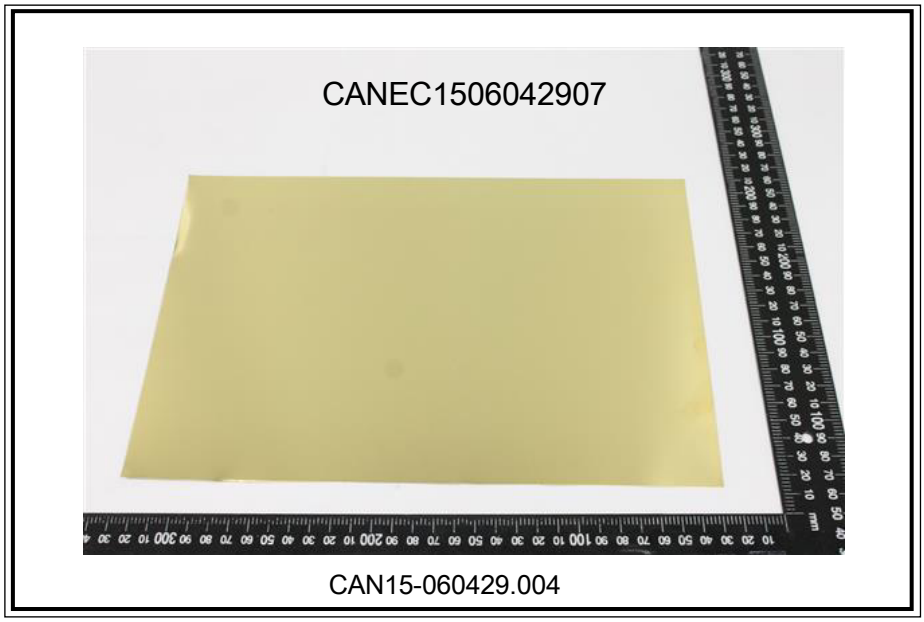
1) Name of the person who made testing: Bruce Xiao
2) Name of the person in charge of testing: Bella Wang
3) These samples were dissolved totally by pre -conditioning method accord ing to below flow chart (Cr6+ test method excluded).



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Sample photo:



CAN15-060429.004

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Test Report

SHENZHEN XIN GUAN DA INDUSTRIAL CO.,LTD

ZHANQI INDUSTRIAL PARK,HOUTING VILLAGE,SHAJING TOWN,BAOAN DISTRICT,SHENZHEN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PLATING LAYER OF Ni Sn(BASE METAL:Cu PLATING:Ni Sn)

SGS Job No. :	CP16-037333 - SZ
Date of Sample Received :	15 Jun 2016
Testing Period :	15 Jun 2016 - 21 Jun 2016
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Violet

Violet,Shi
Approved Signatory

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

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-113614.002	Silver-gray plated metal

Remarks :

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

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 62321-7-1:2015 , determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	*002*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	33
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▾	-	µg/cm²	0.10	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

(2) ▾= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm2. The sample coating is considered to contain CrVI

b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm2). The coating is considered a non-CrVI based coating

c. The result between 0.10 µg/cm2 and 0.13 µg/cm2 is considered to be inconclusive - unavoidable coating variations may influence the determination

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

IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f? p=104:30:1742232870351101::::FSP_ORG_ID, FSP_LANG_ID:1258637,25

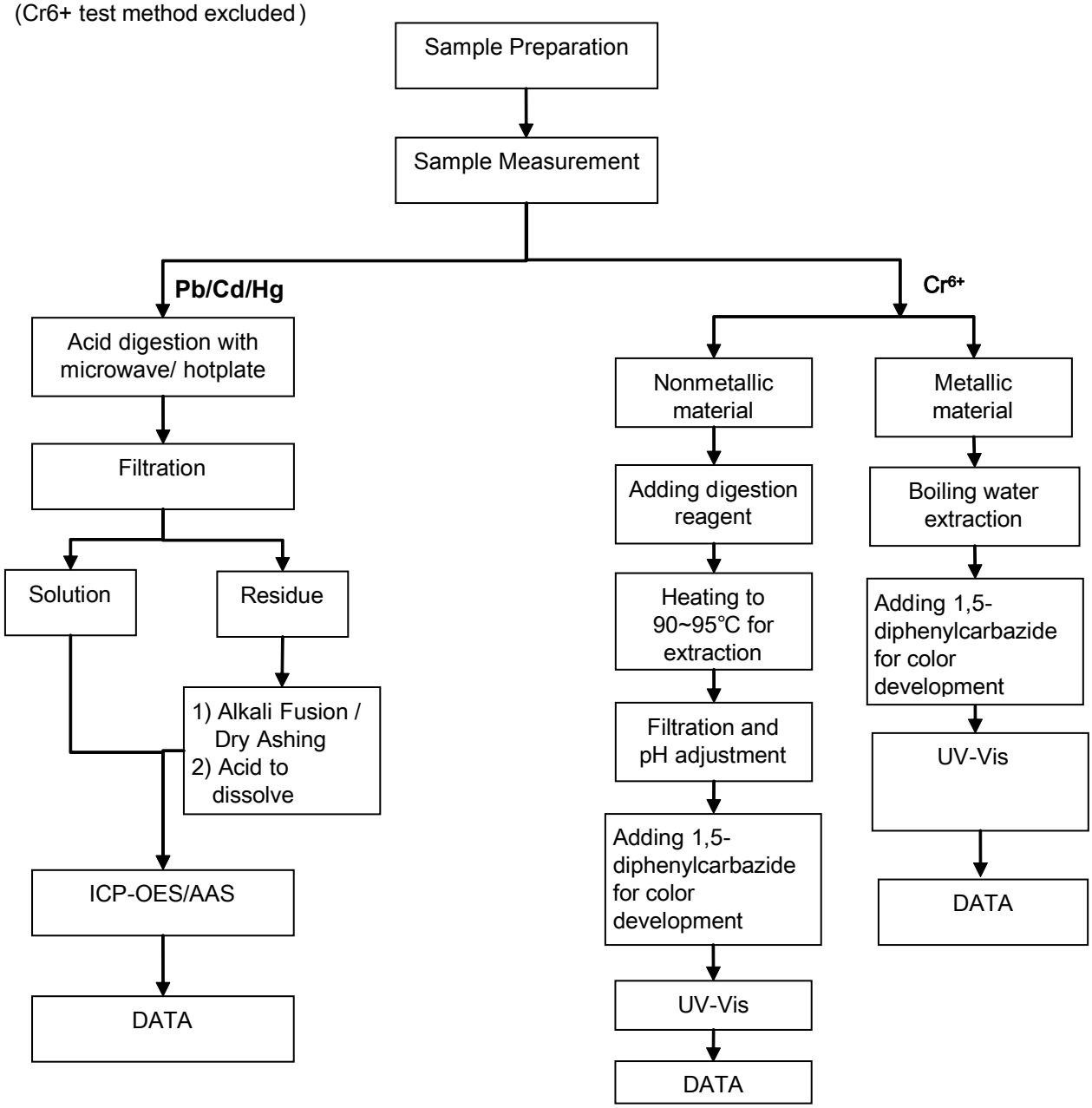
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ATTACHMENTS

Pb/Cd/Hg/Cr^{6+} Testing Flow Chart

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



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Sample photo:



CAN16-113614.002

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DONGGUAN HUA LIANG STEEL PRODUCTS COMPANY LIMITED

CHEN CUN INDUSTRIAL ZONE,HUMEN,DONGGUAN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : SPCC-SD/B

SGS Job No. :	GZIN1506021769PC - GZ
Date of Sample Received :	02 Jun 2016
Testing Period :	02 Jun 2016 - 05 Jun 2016
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

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

Zmguan

Zm guan
Approved Signatory

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Test Results :

Test Part Description :

Specimen No	SGS Sample ID	Description
SN1	CAN15-091735.001	Silver-grey 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.
(5)With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

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

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

Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II.
(2)◇Spot-test:
Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)
◇Boiling-water-extraction:
Negative = Absence of CrVI coating
Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 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.

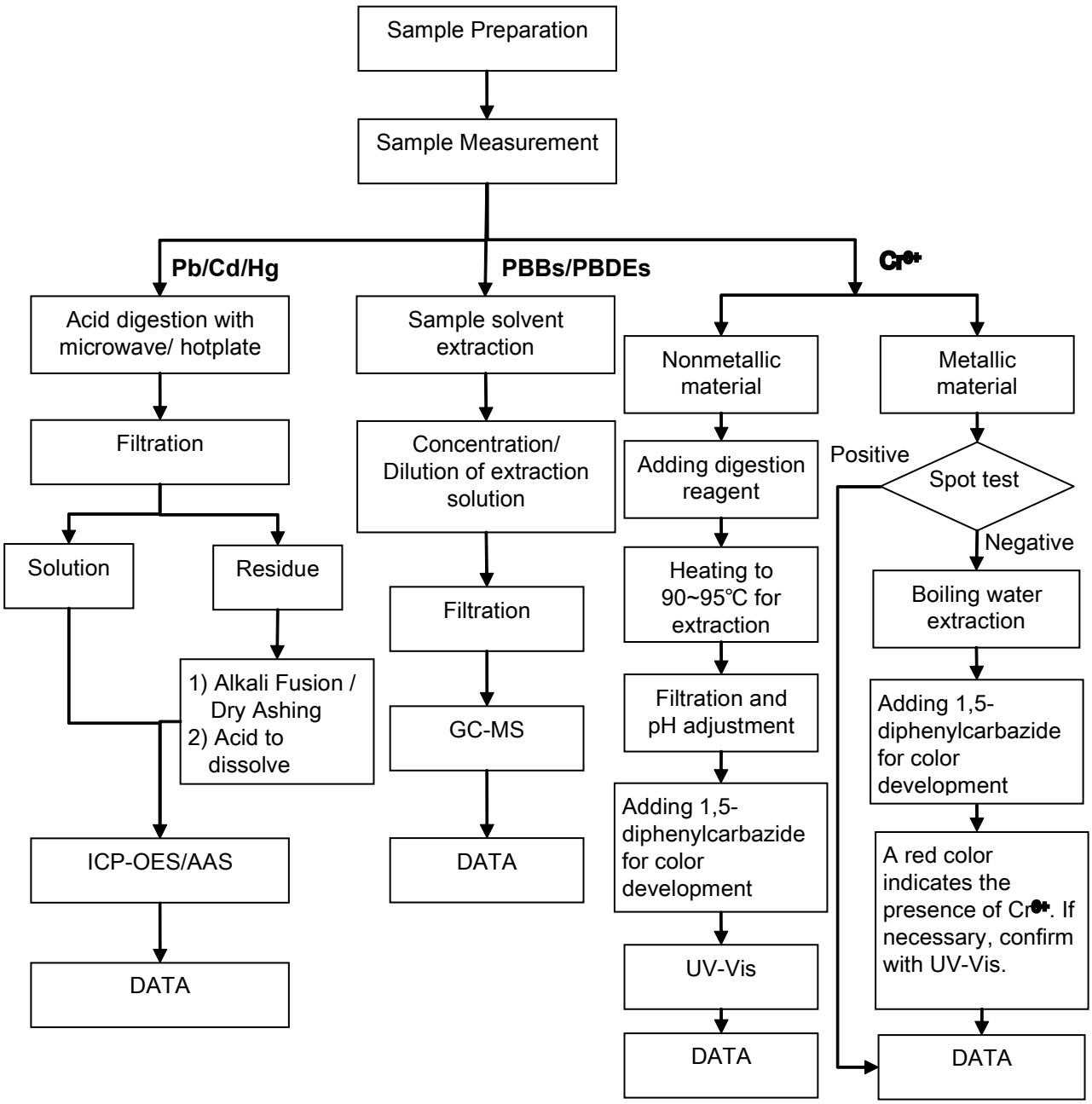
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ATTACHMENTS

RoHS Testing Flow Chart

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



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Sample photo:



CAN15-091735.001

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Test Report

Report No. SCL01H054298005

Applicant DONGGUAN JIEYE HARDWARE CO.,LTD DONGGUAN CHENGXU HARDWARE CO.,LTD

Address LINHAI INDUSTRIAL ZONE FENGHUANG MOUNTAIN SHAJIAO HUMEN TOWN DONGGUAN CITY

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

Sample Name	镀镍产品
Sample Received Date	Jun. 30, 2016
Testing Period	Jun. 30, 2016 to Jul. 7, 2016

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), Phthalates(DBP, BBP, DEHP, DIBP) 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 Jerry Reviewed by Jue

Approved by Danny Liu Date Jul. 7, 2015

Technical Manager

No. R169561719

Test Report

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	Refer to IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	Refer to IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	Refer to IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex B	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
Phthalates(DBP, BBP, DEHP, DIBP)	Refer to EN 14372:2004(E)	GC-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 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
Phthalates		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butylbenzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-2-ethylhexyl phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg

Tested Sample/Part Description Silvery plating

Remark: **The washed plating had been dissolved totally tested for Lead, Cadmium, Mercury.**

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

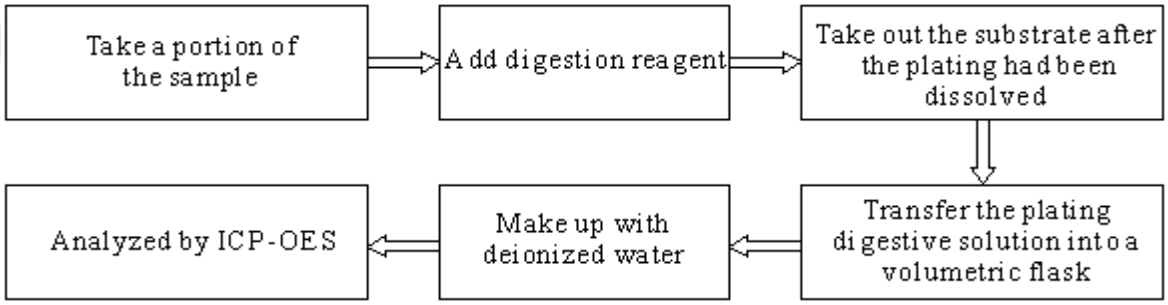
-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm^2 sample surface area used.

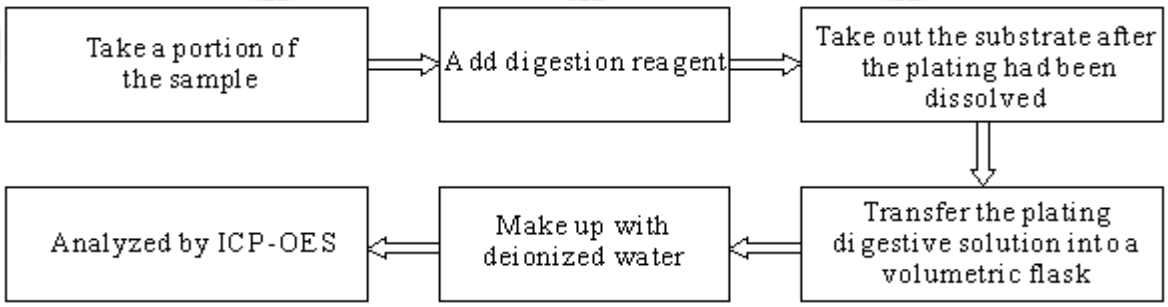
Test Report

Test Process

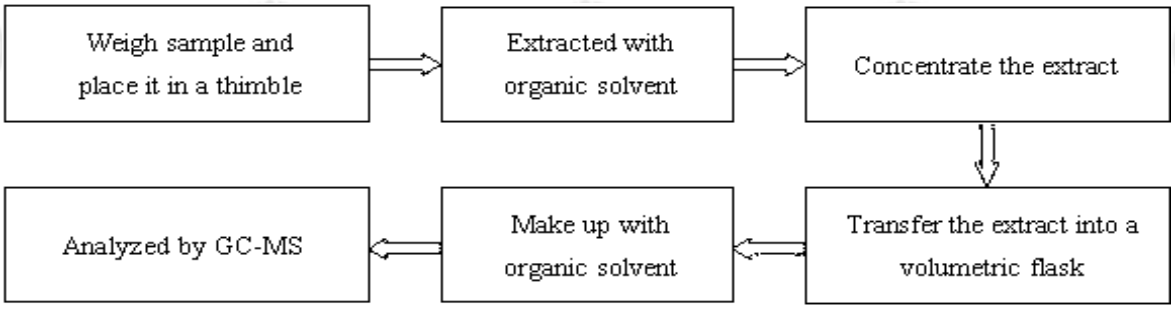
1. Lead (Pb), Cadmium (Cd)



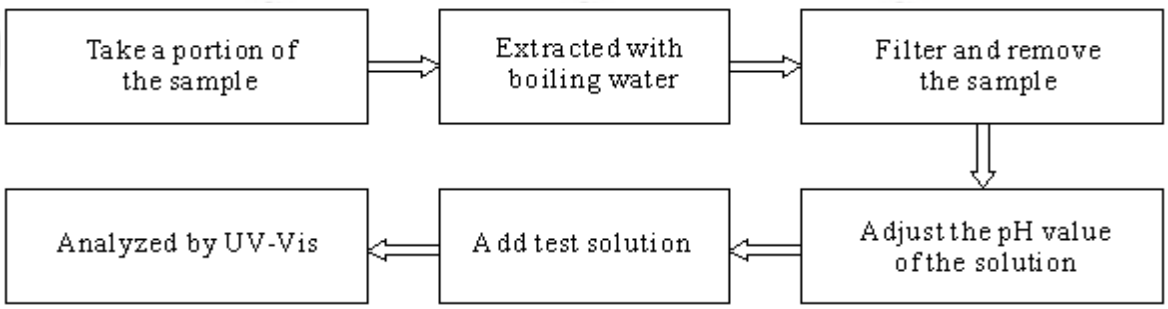
2. Mercury (Hg)



3. Phthalates(DBP, BBP, DEHP, DIBP)

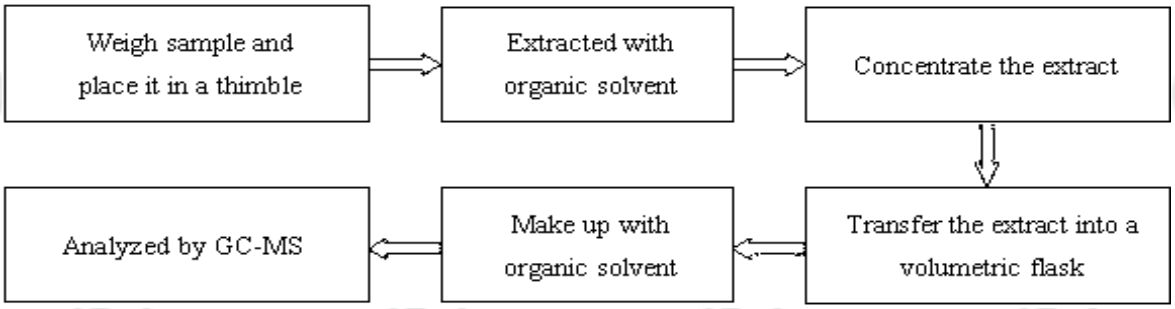


4. Hexavalent Chromium(Cr(VI))



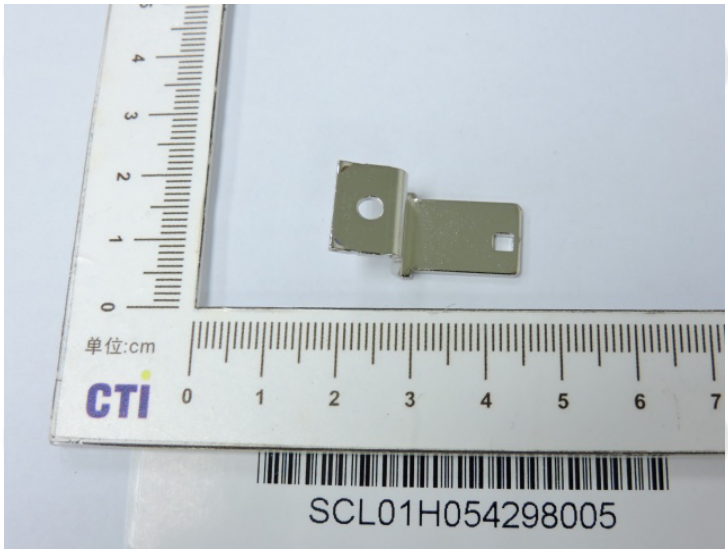
Test Report

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.

製品安全資料表（**MSDS**）

一 物質名稱：

材料號：黃铜 C2680

公司名稱：东莞市创鑫金属有限公司

公司地址：东莞寮步镇下岭贝 397 号

主要成分:

混合物

銅（Cu）64.37%

鋅（Zn）餘量

铁（Fe）不大於 0.5%

Pb%　0.015%

三:健康危害性：

一般環境下，現在沒有可用的資訊，但是，在焊接，熔斷等加工時產生的氣味及研磨時的粉末會對呼吸系統以及眼睛粘膜會造成一定的刺激，焊接時會有產生皮膚燒傷的可能。

四：應急措施：

在進行必要的應急措施後應及時就醫，下麵是應急措施的列子：1. 當氣味和粉末影響呼吸系統產生呼吸困難時，請進行輔助呼吸並及時就醫。 2. 當焊接時導致皮膚燒傷時，應對患者進行冷卻，並及時就醫。3. 當氣味及粉末讀眼睛眼膜產生刺激時，應用大量冷水進行沖洗，並及時就醫。

五：滅火措施: 該製品不易燃。

六：洩露處理方法:該製品易洩露.

七: 使用及保管的注意事項：

避免水侵，避免酸類接觸，避免在高溫高濕下使用。

八：暴露及保護措施：

一般環境下，現在沒有可用的資訊，但是在焊接，熔斷，研磨等作業中，要對氣味，粉末採取一的防護措施。

九：物理狀態： 一般環境下爲黃色固體。

十：安定性及反應性：一般環境下化學性質穩定，不易產生化學反應，但是與酸類物質接觸時會發生化學反應。

十一：運輸時的注意事項： 當包裝數量過多時，要注意防止倒坍，爲防止雨水浸泡，請採取必要的包裝及防護措施。

十二:法規資料:1. 勞工安全衛生設施規則. 2. 勞工用業環境空氣中有害物容許濃度標準.

十三: 其他資料: 參考文獻:無

Material Safety Data Sheet（MSDS）

一、Product and Company Identification

Product Name：(STEEL PLATE COIL COID) SPCC
Product Code： SB.(Pairs cf optical material) SD(Single-light fabrics)
Address Tel..of Manufacture or Agent (:Chung Hung Steel Co.,Ltd) Foshan Naman Hardvare Material Co.,Ltd(Taiwan's Kaohsiung County, 317 Bridge 852 Yuliao) Room 212 No.2 Floor 5 Xihai Industrial District Leong Town ShundeArea Foshan City
Emergency Phone Number/Fax TEL：0769-86342051 FAX；0769-86342052

二、Composition on Ingredients

Piece de resistance

Name: STEEL PLATE COIL COID
Chemical Abstracts Service registry numbers:（CAS NO）
Concentrration(the Percentage of finished produc composition):%、‰。

Increase the material(Its cintent please refer to Our certificate of quality)

Chemistry Composition 稀有成分起稳定作用，约占铁材 1%-3%		
Component Name £ Common	Concenration(percentage composition) Concenration(percentage)	Chemicalbstracts Service registry numbers CAS
(C)	0 .02-0.04 %	7740-44-0
(Mn)	0.15-0.20 %	7739-96-5
(Si)	0.00-0.02 %	7440-21-3
(P)	0. 01-0. 015 ‰	7723-14-0
(S)	0.005-0.010 ‰	7704-34-9
(AL)	0. 035-0. 045 ‰	7740-90-4

Mixtuer:Its conent please refer to the Division I SGS report

Chemistry material		
Component Chemical Name £	the Percentage of the compositionof the	Component test results
Common	Concenration(percentage)	ND
Cd	PPM=Per mimllion(mg/kg)	ND
P	PPM=Per mimllion(mg/kg)	ND
Hg	PPM=Per mimllion(mg/kg)	ND
Cr6+	PPM#Per mimllion(mg/kg)	ND



三、Hazard Indentification Data

Most Important Hazards and Reactions	Health Hazards and Reactions Ingestion may cause abdominal pain,gastrointestinal bleeding
	Environmental Impact: Case of acid,will respond emit harmful gases and metal materials
	Physical and Chemical Hazards: Physical Chemical stability at room temperature
	/Specific Hazard::Without
	Hazard Classification; Without
	Cardinal Symptoms: Abdominal pain gastrointestinal bleeding

四、Fist Aid Measures:

Fist Aid Measures for Different Exposedness pass: Under normal circumstances ,non-toxic gases substances released
Inhalation : Immediately sent to hospital
Most Inportant Sympotoms and Hazard Reactions: Devour Abdominal pain bleeding
Protection ro Fist-Aid Attendants: Inflammation, bleeding,mild hydrogen peroxide can be used
Suggestions to Doctors Without:

五、Fire Fighting Media:

Suitable Extinguishing Media: Without
Special Hazard in Fire: Without
Special Fire-Fighting Procedures; Without
Required Special Protective Equipment for Fire-Fighters: Without

六、Accicdental Release Measures:

Personal Precauions: Do not directly on the skin stuck on it
Environmental Precauions: Without
Methods for Cleaning: Without

七、Handling and Sorage

Handling: Jumbo material at the bottim of each triangular woode mat steady, fixed in their positions not be allowed to freely rolling collision
Strorage: Storage sites should be kept at room temperature ventilation, drying ‘conditions of 75%of the

八、Exposure Controls, Personal Protection

Engineering Measures
Personal Protection Equipment: Wearing overalls
Hand; Wear gloves
Eye: Without
Skin Body: Should be washed clean after the completion of the hand



九、Physical and Chemical Properties

State of Suvstance Solid	Appearance: Coils, sheet metal
Color:: Silver	Odor; Tasteless
PH Value: >7	Boiling Point: Without
Decomposing Temperature: at room temperature did nor decompose	Flaspiont;Melting point 1539 Test Methods:: Without
Seif-Igniting Temperature: Without	/Explosion Limits: Without
Vapor Pressure : Without	Vapor Density: Without
Density: $7.825*10^3$ KG/M^3	Dissolution: Notdissolv inwater at room temperature

十、Stability and Reactivity

Stability: Stable
Possinle Hazard Reacion Under Special to Avoid: 1、acid (such as acetic ,concentrated sulfuric acid). Alkali(eg sodium hydroxide). Oxygen(including Oxygen in the air),water(H_2O) 2、Case of acid,alkali , or rian that may arise oxide:$Fe_2O_3Fe_3O_4$ Commonly known as rust
Conditions to Avid :It objects to avoid collision
Materials to Avoid acid (such as acetic ,concentrated sulfuric acid). Alkali(eg sodium hydroxide). Oxygen(including Oxygen in the air),water(H_2O)
Hazardous decomposition products/:Commonly known as rust

十一、Toxicoloical Information:

Acute Toxicity : Without
Special Reactions :Without

十二、Ecological information;

Possible Environmental /Impact Environmental distribute: Without

十三、Disposal considerations

Disposal Methods: Recycling

十四、Transport information

International Transportation Regulations: Without
Domestic Transportation Regulations: Without
Special Transportantion Methods and Precautions The fixed stars and the vehicle a single material can not let it shake, rain, moisure-proof

十五、Regulatory informayion

Applicabie Regulation: Without

十六、Other Information

Refernces	
Tabulation unit	Use Hardware Guide Shunde District Of Foshan Naman Trade Limited Company Room 212 No.2 Floor 5 Xihai Industrial District Leong Town ShundeArea Foshan City 0769-86342051
Watchmaker	Name: Zhang xu hua
Tabulation Data	2013-01-23

材料安全资料表

MATERLAL SAFETY DATA SHEET

1、 产品及公司证明

产品名称：聚对苯二甲酸丁二醇酯
类似：PBT 化合物
化学式：[CH_2-CH_2-CH_2-CH_2-O-C- O –C-O]n
产品名称：PBT 塑胶
供应商名称：深圳市正昌鑫塑胶五金厂
紧急联络方式：Tel：0755-33679981/79

2、 原料信息组成

原料	CASN：	百分比
聚丁烯对苯二甲酸树脂	30965-26-5	70%
玻纤	65997-17-3	0-30%

3、 危险性鉴别

紧急概况：无信息可用
不利人体健康因素：无信息可用
环境因素：无信息可用
物质及化学危险：无信息可用
具体危险：无信息可用

4、 急救测验

吸入物：若吸入熔融树脂逸出之气体时，将患者移至通风处，并立即送医
吞食：催吐、以清水漱口，若有不适，立即送医
皮肤接触：如碰触到，立即用肥皂及清水清洗
眼睛接触：如在材料融化中碰触到，快速放入冷水及时治疗
保护急救人员：无信息可用
医生笔记口述：如在材料融化中碰触到，快速放入冷水及时治疗

5、 测验消防工作

扑灭传播：二氧化碳，干粉沫，泡沫水
火焰及爆炸危险：无信息可用
特殊消防程序：视为 A 级档案，移除名燃物
保护消防人员的特殊设备：带好个人防护设备

6、 测验免除意外

个人预防措施：带好个人防护设备
环境预防措施：为防止鸟类或鱼类由排水系统中摄食，须全部回收
去污程序：打扫清除每处，可回收

7、 移动与储存

不储存易燃物
放在干净即通风干燥状态

8、 宣传管制/个人防护

估计工程
管理因素

价值标准范围
生物学标准
个人防护装备：面具，安全洒水，清水洗眼
呼吸保护：尘埃
手防护：带保护手套
眼睛防护：戴安全眼镜
皮肤与身体防护：穿干净衣服及戴手套

9 、**物质与化学性质**

静止物质：纯	表格 / 格式
颜色：白，黑，彩色	气味：无臭
酸碱值: 无信息可用	沸点：ＮＤ
分解温度：>300℃	内燃点和使用方法：ND
自然温度：400℃	爆炸性质：无信息可用
最大爆炸压力：$7*10^5$pa/s	蒸汽密度：无信息可用
密度 ：1.60g/cm^3	溶解性：无信息可用

10、 稳定性与活动性

稳定性：在稳定的状态下才能使用与储存
具体情况下可能发生危险的反应：物高于 300 度
预防情形：无信息可用
预防材料：兼顾的基础
分解危险的产品：镇静剂 CO

11、**毒物资料**

严重毒性：LD50(口服、)>5000mg/kg LD50(皮肤、兔)>2000mg/kg
局部效果：无信息可用
敏化作用：无信息可用
慢性或长期毒性：无信息可用
具体结果：无信息可用

12、**生态通知**

可能环境影响，人为和天灾，泄漏以后将产生环境污染

13、**清除原因**

清除方法以安全和环境优先：可回收使用

14、**运输资料**

国际管制
UN 级别数字
运输具体的预防考验和状态

15、**管理资料**

适当管理

16、**其它资料**

NFPA Ratings:
Labcl Hazard Warning:
Literarurc References:

物质安全资料表(MSDS)

1、物品与厂商资料

1.1化学物质名称(原材料名称)

槽别	原材料名称	物品编号
镍槽	氢化金钾	CU
	硼酸	GT-BORIC-01
	镍块	NI
	氯化镍	GT-NICL-01
	硼酸	GT-BORIC-01
	镍光泽剂	GT-302BRIGHTENER
锡槽	锡球	GT-SN
	有机酸	GT-810AEID
	有机锡	GT-810TIN
	纯锡光泽剂	STANTEKXD-7378

1.2 厂商资料

供应商名称:联兴五金镀厂

供应商地址:深圳宝安沙井镇后亭村展奇工业区鑫冠达一楼

供应商电话:0755-27130010

2、成份辨识资料：

2.1 名称:镍块 ,氯化镍,硼酸,镍光泽剂,锡球,有机酸,有机锡,纯锡光泽剂

2.2 同义名称: 无

2.3 化学式:Ni , $Nicl_2$ $6H_20$ H_3BO_3 GT-3023Brightener

2.4 化学成份

Ni^{2+} 70-90g/L $NiCL_26H_2O$ 10-20g/L H_3BO_3 40-50g/L

GT-302Brightener 0.30g/L GT-810Aeid 15000g/L

3、危害性辩论资料

3.1 最重要危害效应

3.1.1 健康危害效应:无相关资料,各组成元素于11项之毒性资料中描述.

3.1.2 环境影响:以上成份元素有显示

3.1.3 物理/化学危险性:以上成份元素中有显示.

3.2 特殊危害:叁考〈广东省化学物品暂行管理条例〉

3.3 主要症状:无相关资料

3.4 物品危害分类:无相关资料

本产品在生产成品后不具有危险性,但制程在生产中各种成份,操作不当,会引起轻度皮肤红肿,干裂,腐烂,轻度无力,恶心,对于人体皮肤呼吸系统会造成刺激性伤害,必须配戴适应之保护用具.

4、防护急救措施

4.1 生产中加工中,产生药液接触之急救方法

4.1.1 酸溅在皮肤上,用大量的水冲洗,然后用5%的$NaHCO_3$清洗

4.1.2 碱溅在皮肤上,用大量的水冲洗,然后用2%的醋酸清洗

4.1.3 吸入:将患者移至通风处,用人工呼吸给氧,同时给予高铁血素解毒剂,吸入硝酸丙醋0.5M上可用2%的$NaHCO_3$水溶液或1:500的Kmm04溶液洗胃,催吐.

物质安全资料表(MSDS)

4.2 最重要症状危害措施:无相关资料
4.3 对急救人员之防护:无相关资料
4.4 对医师之提示:无相关资料
5、灭火措施
5.1 适用于灭火剂:不可燃物,不适用
5.2 灭火时要能会遇到之特殊危害,不可用燃物,不适用
5.3 特殊灭火程序:不可燃物,不适用
6、泄漏处理方法：
6.1 个人应注意事项:轻拿轻放.
6.2 环境注意事项:需分开单独存放.
6.3 清理方法:已成桶包装,不适用
7、安全处置与储方法：
7.1 处置
7.1.1 操作相关成份时,需戴手套及胶鞋.
7.1.2 身体外露部分或皮破伤者禁止与药液相接触.
7.1.3 在操作时须戴防护用品.
7.1.4 在操作时禁止吸烟和用食.
7.1.5 加强车间内通风
7.2 储存
7.2.1 储存于干燥通风良好室内或具有温湿度控制之空间.
7.2.2 严禁暴露于室外或温湿度高密闭空间.
8、暴预防措施：
合金无相关资料报道，组成之各元素相关资料如下所述：
8.1 生产控制:在生产时若生产有雾,必须要用通风设备.
8.2 生物指标:无相关资料
8.3 个人防护设备:长时间在生产时必须有适当的防护.
8.3.1 手套:工作防护手套.
8.3.2 适当工作服,安全鞋.
8.3.3 卫生措施,无相关资料.
9、物理及化学性质
制成品之特性：镍块

物质状态：固体	形状　依制成品形状
颜色：银白色金属	气味：无
闪火点：——	PH值：——
	分解温度：50-60°

物质安全资料表(MSDS)

纯锡球：

物质状状	形状　依制成品形状
颜色：银白色	气味：无
闪火点：——	PH值：——
	分解温度：18-25°

组成药液主要特性

槽液温度：Ni ：50-60°C		Sn：18-25℃
PH值：Ni：3.5-4.5		电镀密度:10-30A/dm^2

10、安定性及反应性：
10.1 安定性:一般环境下相对安定
10.2 应避免之状况:无相关资料
10.3 应避免之物质:无相关资料
10.4 危害分解物:无相关资料
11、毒性资料：
合金无相关资料报道，组成之各元素相关资料如下所述：
11.1 急毒性;急性中毒症状为呕吐,无力,头晕,皮肤干裂.
11.2 局部效应:无相关资料
11.3 致敏感性:无相关资料
11.4 慢毒性或长期毒性:强酸碱对皮肤,肌肉有腐蚀危害性.
12、生态资料
12.1 分解性:无相关资料
12.2 蓄积性:无相关资料
12.3 水中的各药水在0.015-3.0g/1的情况时,会对环境造成影响,具有毒性.
13、废液处理方法
13.1 其生产中各种液体属危害性废弃物,须经过专业废理人员处理.
14、运送资料
14.1 国际,国内,联合国,暂无相关资料.
14.2 特殊运送方法及注意事项:不可手直接触摸生产,并且要注意会有滑落,掉落之危险发生.
15、法规资料
15.1 适用法规：通常无特定法令规定，但是在会产生汽雾場所，
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所含浓度标准。
15.2 国际法规;暂无
16、其它资料
16.1 叁考资料
工业技术研究环境与安全卫生技术发展中心.
16.2 制表单位
名称:联兴电镀厂　　电话:0755-27130010

物質安全資料表
MATERIAL SAFETY DATA SHEET(MSDS)

1 供應商資料

物品名稱：镍

供應商名稱：锦坤金属(深圳)有限公司

地址：深圳松岗江边创业三路

電話：0755-27537899

緊急聯絡人：袁仕勇 | 電話:0755-27537899 | 傳真：0755-27537299

2 成份辨識資料

中英文名稱：

材質成份辨識資料			化學文摘社登記號碼CAS NO:	濃度或濃度範圍(成份百分比)			危害物質分類及圖示
成份名稱	化學式	含量(%)		時量平均容許濃度 TWA	短時間時量平均容許濃度 STEL	最高容許濃度 CEILING	
镍	Ni	99.99%	7440-02-0				
钴	Co	0.0081%	7440-48-4				
铜	Cu	0.001%	7440-50-8				
铁	Fe	0.0005%	7439-89-6				
锌	Zn	0.0004%	7440-66-6				

3 危害辨識資料與急救措施

最重要危害效應

健康危害效應:：可引起镍皮炎，又称镍“痒疹”。皮肤剧痒，后出现丘疹、疱疹及红斑，重者化脓、溃烂。长期吸入镍粉可致呼吸道刺激、慢性鼻炎，甚至发生鼻中隔穿孔，尚可引起变态反应性肺炎、支气管炎、哮

環境影響: 对环境有危害，对水体可造成污

物理性及化學興危害: 以上成份元素有显示

特殊危害:本品属自燃物品，具刺激性，接触可引起皮炎，奇痒。

主要症狀:无

物品危害分類: 無相关资料

4 急救措施

急救措施

入：迅速脱离现场至空气新鲜处，保持呼道通畅。如呼吸困难，给输氧。如呼吸停立即进行人工呼吸。就医。皮肤接触：大量流动清水冲洗至少15分钟，并用肥皂清洗。

入：饮足量温水，诱道吐出及时就医。

最重要危害效應:(同三,相关危害状况资之健康危害状况)

對急救人員防護: (空白)

對醫師之提示: (空白)

5 滅火措施

適用滅火器: 化学干粉、砂土。

滅火時可能遭遇特殊危害无

特殊滅火程序: 无

消防人員之特殊防護設備:消防人员必须佩戴过滤式防毒面具(全面罩)或隔离式呼吸器、穿全身防火防毒服，在上风向灭火.

6 洩漏處理方法

個人應注意事項:隔离泄漏污染区，限制出入。切断火源。建议应急处理人员戴自给正压式呼吸器，穿防毒服。不要直接接触泄漏物。使用无火花工具收集于干燥、洁净、有盖的容器中。转移

環境注意事項: 泄漏物须回收.

清理方法: 冷却后刮取回收.

7 安全處置與儲存方法

處置:密闭操作，局部排风。操作人员必须经过专门培训，严格遵守操作规程。建议操作人员佩戴自吸过滤式防尘口罩，戴化学安全防护眼镜，穿透气型防毒服，戴防化学品手套。远离火种、热源，工作场所严禁吸烟。使用防爆型的通风系统和设备。避免与氧化剂、酸类接触。搬运时要轻装轻卸，防止包装及容器损坏。配备相应品种和数量的消防器材及泄漏应急处理设备。倒空的容器可能残留有害物。

儲存: 储存于阴凉、通风的库房。远离火种、热源。包装要求密封，不可与空气接触。应与氧化剂、酸类等分开存放，切忌混储。采用防爆型照明、通风设施。禁止使用易产生火花的机械设备和工具。储区应备有合适的材料收容泄漏物。

8	暴露預防措施	工程控制: 密闭操作，局部排风。	
		参數控制: 无	
		個人防護設備: 呼吸防护：防尘面置；　手部防护：防护手套；	
		呼吸防護: 可能接触其粉尘时，佩戴自吸过滤式防尘口罩	眼睛防護:戴化学安全防护眼镜。
		手部防護: 手套	皮膚及身體防護: 穿工作服,經常勤洗
		衛生措施:工作完毕，淋浴更衣。注意个人清洁卫生。工作时皮肤划伤应及时处理。	
9	物理及化學性質	物質狀態: 坚硬金属	形狀: 固体
		顏色:银白色	氣味: 无
		PH值: 无	沸點/沸點範圍:2732度
		分解溫度: 无	閃火點: 无
			測試方法: 未測定
		自然溫度:无	爆炸界限: 無
		蒸氣壓: 0.13(1810度)	蒸氣密度: 固體 無
		密度: 无	酸
10	安定性及反應性	安定性: 酸性条件下有分解的倾向	
		特殊狀況下可能危害反應: 無	
		應避免狀況:无	
		應避免之物質: 酸类、强氧化剂、硫。	
		危害分解物: 无	
11	毒性資料	急毒性:无	致敏感性: 無
		局部效應: 無	
		慢毒性或長期毒性:无	
		特殊效應: 無	
12	生態資料	该物质对环境有危害.	
13	廢棄處置方法	根据国家和地方有关法的要求处置。或与厂商或制造商联系，确定处理方法。	
14	運送資料	國際運送規定: 暂无相关资料	
		聯合國編號:无	
		國內運送規定: 暫无相关资料	
		特殊運送方法及注意事項: 无	
15	法規資料	适用法规:化学危险物品安全管理条例（1987年2月17日国务院发布）。化学危险物品安全管理条例实施细侧（化劳发{1992}677号，工作场所安全使用化学品规定{1996}劳部发423号）等法规，针对化学危险品的安全使用、生产、储存、运输、装卸等方面均作了相应的规定.	
16	其它	參考文獻:	无
		製表單位: 品保部	名稱: 锦坤金属(深圳)有限公司
			地址/電話: 深圳松岗江边创业三路
		製表人:袁仕勇	職稱: 品保副理　姓名:袁仕勇
		製表日期: 201 -8-01	公元: 201 -8-01

物質安全資料表
MATERIAL SAFETY DATA SHEET(MSDS)

1 供應商資料

物品名稱：锡

供應商名稱：锦坤金属(深圳)有限公司

地址： 深圳松岗江边创业三路

電話： 0755-27537899

緊急聯絡人：袁什勇 | 電話: 0755-27537899 | 傳真: 0755-27537299

2 成份辨識資料

中英文名稱：

材質成份辨識資料			化學文摘社登記號碼CAS NO:	濃度或濃度範圍(成份百分比)			危害物質分類及圖示
成份名稱	化學式	含量(%)		時量平均容許濃度 TWA	短時間時量平均容許濃度 STEL	最高容許濃度 CEILING	
锡	Sn	99.9934%	53408-94-9				
铅	Pb	0.0018%	7439-92-1				
铋	Bi	0.0001%	7440-69-9				
铜	Cu	0.0007%	7440-50-8				
铁	Fe	0.0018%	7439-89-6				
锑	Sb	0.0018%	7440-36-0				
锌	Zn	0.0004%	7440-66-6				

3 危害辨識資料與急救措施

最重要危害效應

健康危害效應：：熔融焊料温度500摄氏度以上时，可能产生蒸气，吸入后可能造成贫血、失眼、体弱无力、便秘、恶心、腹痛等；状况严重时，可能会对中枢神经造成影响，甚至对生殖、消化系统也会造成一定的影响

環境影響：以上成份元素有显示

物理性及化學興危害：以上成份元素有显示

特殊危害：反复低浓度接触，可引起支气管炎；可致皮炎。

主要症狀：眩晕、头痛、皮肤过敏等

物品危害分類：無相关资料

4 急救措施

急救措施

吸入：吸入蒸气造成呼吸困难时须将患移动到空气流通较好处.并及时送医院诊

皮肤接触：用肥皂水清洗，烫伤用冷水降温后或皮肤过敏时应请医生处理

食入：及时请医生处理.

最重要危害效應:(同三,相关危害状况资之健康危害状况)

對急救人員防護: (空白)

對醫師之提示: (空白)

5 滅火措施

適用滅火器: 二氧化碳、化学干粉、泡沫灭火器、水。使用灭火时，须避免高温焊料遇水喷溅造成的人员烫伤。

滅火時可能遭遇特殊危害: 熔融之合金在高的温度下遇水时可能会产生严重喷溅，可能会造成人员烫伤。

特殊滅火程序: 无

消防人員之特殊防護設備:灭火人员须穿防火衣和配戴便携式呼吸器

6 洩漏處理方法

個人應注意事項: 熔融态的焊料须经冷却到常温后方可处理，避免烫伤.

環境注意事項: 泄漏物须回收.

清理方法: 冷却后刮取回收.

7 安全處置與儲存方法

處置:作业温度不宜高于500摄氏度，人员须配戴防护设备，避免吸入蒸气、粉尘，清扫时不宜使用干扫把及高温气体喷刷，以免粉尘飞扬。

储存: 储存时须防水，防污染，包装须标示危害物标识。

8	暴露預防措施	工程控制: 密闭操作，局部排风。	
		参數控制: 无	
		個人防護設備: 呼吸防护：防尘面置；　手部防护：防护手套；	
		呼吸防護: 可能接触其粉尘时，佩戴自吸过滤式防尘口罩	眼睛防護:戴化学安全防护眼镜。
		手部防護: 手套	皮膚及身體防護: 穿工作服,經常勤洗
		衛生措施:工作完毕，淋浴更衣。注意个人清洁卫生。工作时皮肤划伤应及时处理。	
9	物理及化學性質	物質狀態: 坚硬金属	形狀: 固体
		顏色:银白色	氣味: 无
		PH值: 无	沸點/沸點範圍:2732度
		分解溫度: 无	閃火點: 无
			測試方法: 未測定
		自然溫度:无	爆炸界限: 無
		蒸氣壓: 0.13(1810度)	蒸氣密度: 固體 無
		密度: 无	酸
10	安定性及反應性	安定性: 酸性条件下有分解的倾向	
		特殊狀況下可能危害反應: 無	
		應避免狀況:无	
		應避免之物質: 酸类、强氧化剂、硫。	
		危害分解物: 无	
11	毒性資料	急毒性:无	致敏感性: 無
		局部效應: 無	
		慢毒性或長期毒性:无	
		特殊效應: 無	
12	生態資料	该物质对环境有危害.	
13	廢棄處置方法	根据国家和地方有关法的要求处置。或与厂商或制造商联系，确定处理方法。	
14	運送資料	國際運送規定: 暂无相关资料	
		聯合國編號:无	
		國內運送規定: 暂无相关资料	
		特殊運送方法及注意事項: 无	
15	法規資料	适用法规:化学危险物品安全管理条例（1987年2月17日国务院发布）。化学危险物品安全管理条例实施细侧（化劳发{1992}677号，工作场所安全使用化学品规定{1996}劳部发423号）等法规，针对化学危险品的安全使用、生产、储存、运输、装卸等方面均作了相应的规定.	
16	其它	參考文獻:	无
		製表單位: 品保部	名稱: 锦坤金属(深圳)有限公司
			地址/電話: 深圳松岗江边创业三路
		製表人:袁仕勇	職稱: 品保副理　姓名:袁仕勇
		製表日期: 2016-8-01	公元: 2016-8-01

電鍍铁壳安全資料說明書

MSDS　檔更新日期：2016 年 08 月 01 日

1. 產品與公司識別

產品名稱：鍍鎳層产品

企業名稱：東莞市誠旭五金製品有限公司

企業地址：東莞市虎門鎮沙角鳳凰山臨海工業區

企業電話：0769-85111766

企業傳真：0769-81611567

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緊急聯絡電話：0769-85111766

2. 產品成份

產品名稱：鍍鎳層

成份名稱：鎳（Ni）

CAS 標號：7440-02-0

鎳含量：＞99.9%

其他：：餘量

3. 危害性說明

警告：

長時間用手接觸電鍍端子，會造成重金屬中毒；檢查時需配戴手套或手指套。

種類的名稱：銅镍混合物

危險標示類別：嚴禁用手直接接觸，會造成重金屬中毒。產品本身沒有刺激性和有

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毒性氣體，不會對眼睛，呼吸道造成危害。

4・急救措施

食入時：大量喝水並催吐，迅速送醫就診。

對於長時間皮膚接觸危害：長時間接觸會導致患皮膚病，發現皮膚瘙癢，應立即用酒精清洗，嚴重時求醫醫治。

5・火災及爆炸危害資料

爆炸性：無

可燃性：無

燃燒性：無

閃火點：不適用

自然性：不適用

滅火劑

滅火方式：使用滅火劑於材料表面即可

消防建議

注意粉塵可能導致爆炸或產生可燃氣體。

6・洩漏的處置

洩露於空氣中：不適用

洩露於水中：不適用

洩露於地面中：不適用

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7・取用及儲運方式

取用注意事項：

產品之端面易割傷皮膚應小心取用。

取用時需配戴手套。

儲存條件：

倉儲存放溫濕度：恆溫恆濕

避免放置於高溫高濕或酸/鹼性物質或酸/鹼性氣體之場所。

8・人員曝露防護措施

皮膚防護：需要配戴防護手套

9・物理及化學性質

物理性質：固體

外觀：銀白色

氣味：無味

溶點：鎳：1455℃

沸點：鎳：2730℃

密度：8.9g/cm^3

10・安定性及反應

非活性物質

11・毒性資料

來源途徑

重金屬：皮膚接觸

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動物毒性：無此資料

12．生態資料

分解性：會產生有害物質，對土壤，空氣有危害。

蓄積性：不具有毒性。

突變形：不會造成突變性。

魚毒性：水中的重金屬會對魚類、軟體動物、浮游生物具有毒性。

13．廢棄處理

丟棄時可以委託回收商予以回收再生處理

14．運輸資料

運送時本產品不要直接與水接觸

15．法規資料

有害物質依照歐盟要求執行

16．其他資料

本 MSDS 內資料應補所有使用、運送、儲存於本產品之公司/人員充分瞭解與接受，並將其應用於使用、加工、製造或管理與本產品有關之作業規定。本 MSDS 資料內容在編訂時已盡可能將最新之資料納入，但對所有內容並不予以任何保證。

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MATERIAL SAFETY DATA SHEET(物质安全数据表)

一、物料与供货商资料：

物品名称：快削铁
物品代码：1214
化学名称：Fe-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灵峰北路 189 号
联络电话：0574-63215395　　传真：0574-63215396

二、物质构成成份：

化学名称	化学式	CSA NO.	比率
铁	Fe	7439-89-6	<98%
锰	Mn	7439-96-5	1.00%
碳	C	7440-44-0	0.07%
铬	Cr	7440-47-3	0.05%
硫	S	63705-05-5	0.280%
钠	Na	7440-23-5	0.025%
磷	P	7723-14-0	0.049%
硅	Si	7440-21-3	0.01%

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

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。