

承 認 書  
SPECIFICATION FOR APPROVAL

客 戶  
CUSTOMER

德勝科技股份有限公司

日 期  
DATE

2006/5/22

品 名  
DESCRIPTION

WSS007 2.4GHz 5dBi  
Antenna with N Male

客 戶 料 號  
CUSTOMER P/N

成 品 編 號  
Part NO.

W5W1146A1



萬旭電業股份有限公司

WANSHIH ELECTRONIC CO., LTD.

台北縣五股鄉五工六路 72 號 3 樓

3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT  
TAIPEI HSIEN, TAIWAN, R.O.C.

TEL : (02) 22988066 (5 LINE) FAX : (02) 22981102

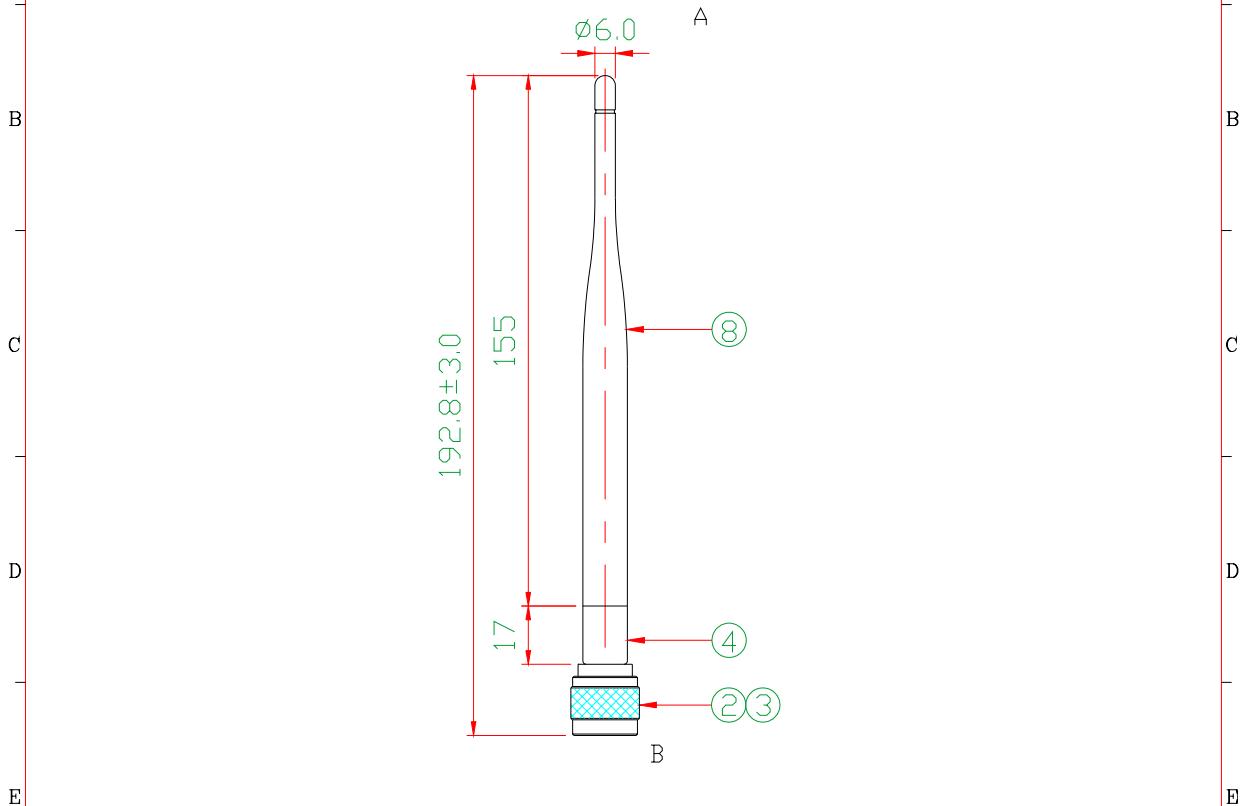
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# SPECIFICATION

1. Description	: WSS007 2.4GHz Antenna With N Male
2. Customer	: 德勝科技股份有限公司
3. Model No.	: WSS007
4. Part No.	: W5W1146A1
5. Standard	: IEEE 802.11b/g Wireless LAN
6. Antenna Profile	: 192.8 mm (see Drawing)
7. Color	: Black
8. Electrical Characteristics	
Operating Frequency	: 2.4~2.5 GHz
Antenna Type	: Dipole
Polarization Type	: Linear
Type of Radiation	: Toroidal
Peak Gain	: 5.0 dBi Typical
Impedance	: 50 Ohm nominal
V.S.W.R.	: 2.0:1 Max.
9. Mechanical Characteristics	
Connector	: N Male
Core	: N/A
10. Raw Material	
Coaxial Cable	: MIL-C-17 RG-178 B/U
Housing	: TPE
Hinge	: PC+ALLOY

1	2	3	4	5		
TOLERANCES:		版次	修訂日期	ECR NO.	作 成	設 計 變 更 內 容 簡 述
X $\pm 0.5$						
X.X $\pm 0.3$						
X.XX $\pm 0.1$						
ANGULAR $\pm 5.0^\circ$						



#### 作業說明 :

1. 天線本體 , WSW0005A 5dBi 天線作業標準指導書規定製作。  
依據 QA-0005A QC管理工程圖 ,執行品質管制。

NO	材料名稱	環材	電腦編號	零件規格	顏色	切斷尺寸	用量	備註
8	外套L155<黑>		6913L1550000IT	@13 *L155 黑 外套 <天線用>	黑		1	或同級品
7	固定支撐桿 L42<黑>		6985L0420000IT	@8.5 *L42 黑固定支撐桿天線用	黑		1	或同級品
6	彈簧<G>天線用		69ZZGOD5600TWO	@彈簧<G>天線用OD5.6_ID3.2_6TURNS			1	或同級品
5	銅管L28.5		B252L2850000SJ	@5.2 *28.5L 銅管<平頭>	銀		1	或同級品
4	直式上座		B013270L0000IT	@13 *27L直式上座 PC90064黑	黑		1	或同級品
3	RP-SMA 12.5 連接軸		B0249AB1250TVD	@0249A-B Connector RP-SMA(M) 12.5	銀		1	或同級品
2	N(M) 本體		B0316A000000VD	@0316A N(M) For Antenna	銀		1	或同級品
1	RG-178 Coaxial Cable		19RG17800030AE	@RG-178 CABLE 105SV	橙	62	1	或同級品
NO	材料名稱	環材	電腦編號	零件規格	顏色	切斷尺寸	用量	備註

修訂日期 : 制訂日期 : 2006/05/22				承認圖號			
頁數 : 1 / 1	核 淮	審 查	作 成				
H 第三角法	Ryan	郭慧純	郭雅珍	品 名	WSS007 2.4GHz 5dBi Antenna with N Male (Black)		
單位 : mm				成品編號	W5W1146	REV	VERSION
比例 : FREE					A	1	

# Connector



## Test Report

WANSHIH ELECTRONIC CO., LTD.  
3F, 72, WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT,  
TAIPEI HSIEN, TAIWAN, R.O.C.

報告號碼 : CE/2005/76240  
日期 : 2005/08/09  
頁數 : 1 of 1

以下測試樣品乃供應廠商所提供之確認：

樣品名稱 : SMA CONNECTOR  
產品型號 : RF接頭  
收件日期 : 2005/07/28.  
測試日期 : 2005/07/28 TO 2005/08/09

### 測試結果

測試部位 NO.1 : 混測金色金屬上有黑色鍍層(請參照附件圖片)

測試項目:	單位	測試方法	偵測極限值	結果
				NO.1
六價鉻	ppm	依照US EPA 3060A方法,用UV-VIS 做分析	2	N.D.
鎘	ppm	依照 EN1122 方法B:2001或其他酸 消化方法,用感應耦合電漿原子發 射光譜儀(ICP-AES)做分析	2	42.5
汞	ppm	依照 US EPA 3052 方法或其他酸 消化方法,用感應耦合電漿原子發 射光譜儀(ICP-AES)做分析	2	N.D.
鉛	ppm	依照 US EPA 3050B 方法或其他酸 消化方法,用感應耦合電漿原子發 射光譜儀(ICP-AES)做分析	2	22536.0

備註 : (1) N.D. = Not detected.(<MDL) / 未檢出(低於偵測極限值)

(2) ppm = mg/kg / 百萬分之一

(3) MDL= Method Detection Limit(偵測極限值)

Daniel Yen, M.R. / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

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**Test Report**

No. SH520814/CHEM

Date: 4.15.2005

Page 1 of 2

DYNALUO CO., LTD

4<sup>TH</sup> FLOOR, NO.94, PAO CHUNG ROAD, HSIN TIEN CITY, TAIPEI, TAIWAN 231

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

Sample Name : WHITE PLASTIC  
SGS Ref No. : SHD252258  
Item No. : EXTRUSION STICK  
Manufacturer : DYNALUO  
Exported to : TAIWAN

Sample Receiving Date : April 13, 2005

Testing Period : April 13 to April 15, 2005

Test Requested : 1) To determine the Cadmium, Lead, Mercury and Hexavalent Chromium Content of the submitted sample.  
2) To determine the PBBs(Polybrominated biphenyls) PBDEs(PBDEs) (Polybrominated biphenyl ethers) Content of the submitted sample.

Test method : 1) In-house Method, Analysis was performed by Inductively Coupled Argon Plasma Spectrometry or Atomic Absorption Spectrometry.  
Hexavalent Chromium :With reference to US EPA3060A and US EPA7196A  
2) With reference to US EPA 8081, Analysis was performed by GC/MS.

Test Results : Please refer to next page

Signed for and on behalf of  
SGS-CSTC Clinical Laboratory



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SHCH 249639

SGS-CSTC Standards Technical Services Co., Ltd | 1/F, 7/F, 9/F & 10/F, the 3rd Building, No. 889, Yishan Road, Xuhui District, Shanghai, China 200233 | t +86 21 6495 1616\*2822 | f +86 21 5450 0314  
Shanghai Branch Testing Center/Chemical Laboratory | 中国, 上海, 徐汇区宜山路889号3号楼1楼, 7楼, 9楼, 10楼 | 邮编: 200233 | t +86 21 6495 1616\*2822 | f +86 21 5450 0314 | [www.cn.sgs.com](http://www.cn.sgs.com)

Member of the SGS Group (Société Générale de Surveillance)

**Test Report**
**No. SH520814/CHEM**
**Date: 4.15.2005**
**Page 2 of 2**
**Test Results**

<u>No.</u>	<u>Item</u>	<u>Unit</u>	<u>MDL</u>	<u>A</u>
1	Cadmium (Cd)*	ppm	5	N.D.
	Lead (Pb)	ppm	5	N.D.
	Mercury (Hg)*	ppm	2	N.D.
	Hexavalent Chromium (Cr VI)*	ppm	2	N.D.
2	PBBs(Polybrominated biphenyls)*	—	—	—
	PBBs(Bromobiphenyl)	ppm	5	N.D.
	PBBs(Dibromobiphenyl)	ppm	5	N.D.
	PBBs(Tribromobiphenyl)	ppm	5	N.D.
	PBBs(Tetrabromobiphenyl)	ppm	5	N.D.
	PBBs(Pentabromobiphenyl)	ppm	5	N.D.
	PBBs(Hexabromobiphenyl)	ppm	5	N.D.
	PBBs(Heptabromobiphenyl)	ppm	5	N.D.
	PBBs(Octabromobiphenyl)	ppm	5	N.D.
	PBBs(Nonabromobiphenyl)	ppm	5	N.D.
	PBBs(Polybrominated biphenyls)	ppm	5	N.D.
	PBBEs(PBDEs)(Polybrominated biphenyl ethers)*	—	—	—
	PBBEs(PBDEs)(Monobromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Dibromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Tribromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Tetrabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Pentabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Hexabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Heptabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Octabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Nonabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Decabromobiphenyl ether)	ppm	5	N.D.

(Result shown is of the total weight of sample)

**Sample Description:**

A. White solid stick

Note : ppm=mg/kg

MDL= Method Detection Limit

N.D. = Not detected.(<MDL)

\*The test results are taken from report No. SH512038/CHEM, Date: 23/03/2005

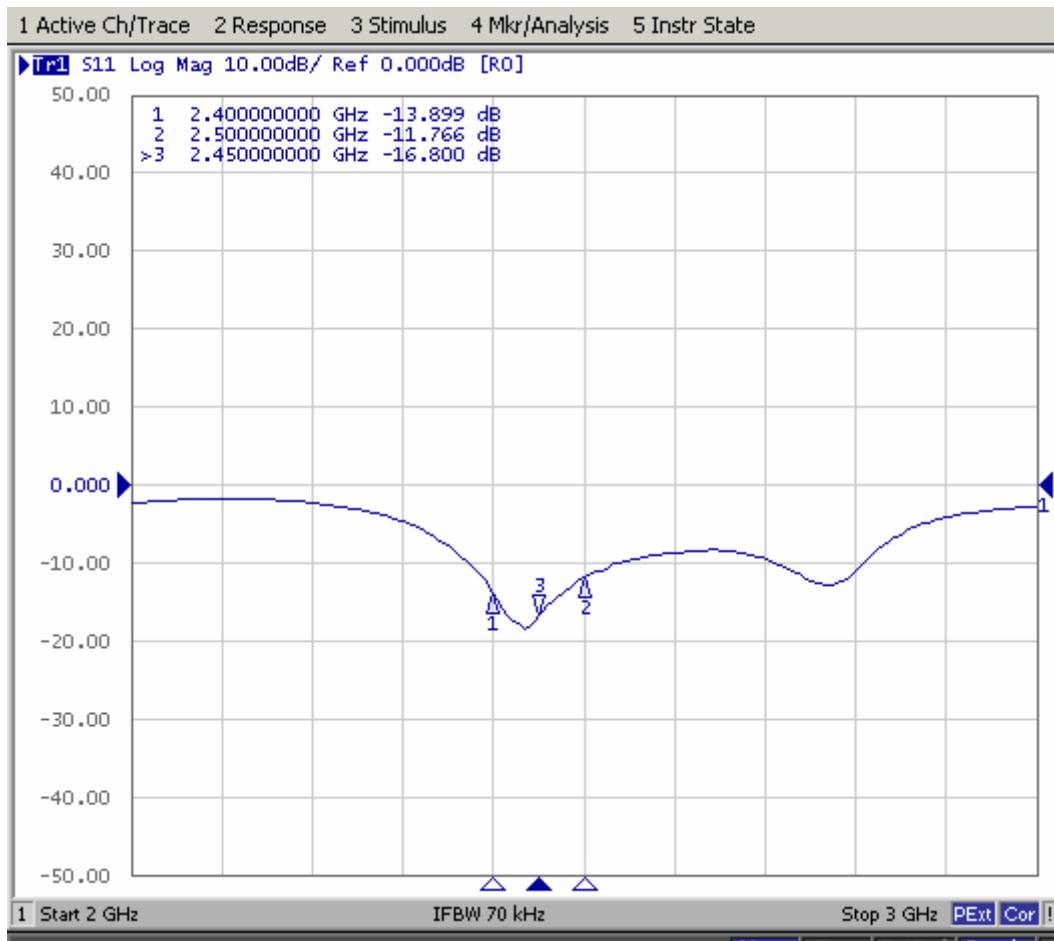
\*\*\* End of Report \*\*\*

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SHCH 249640

# Electrical Properties

## Return Loss



# Electrical Properties

## Radiation Pattern – H Plane

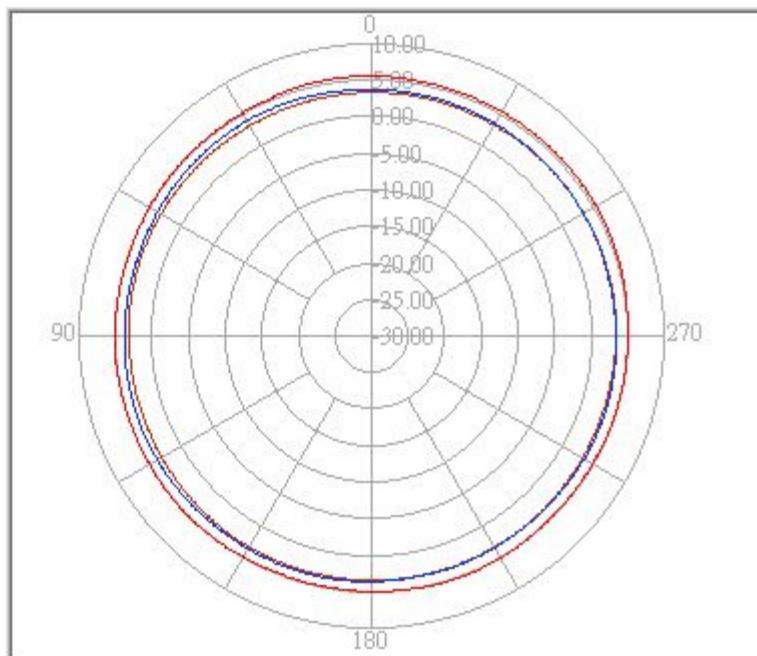


萬旭電業股份有限公司

**Model No:** Ituner

**Antenna Position:** Vertical

**Test Mode:** H-Plane



Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2400.00	3.52	71.81	3.37
2450.00	5.61	352.96	5.21
2485.00	4.04	331.84	3.70

# Electrical Properties

## Radiation Pattern – E Plane

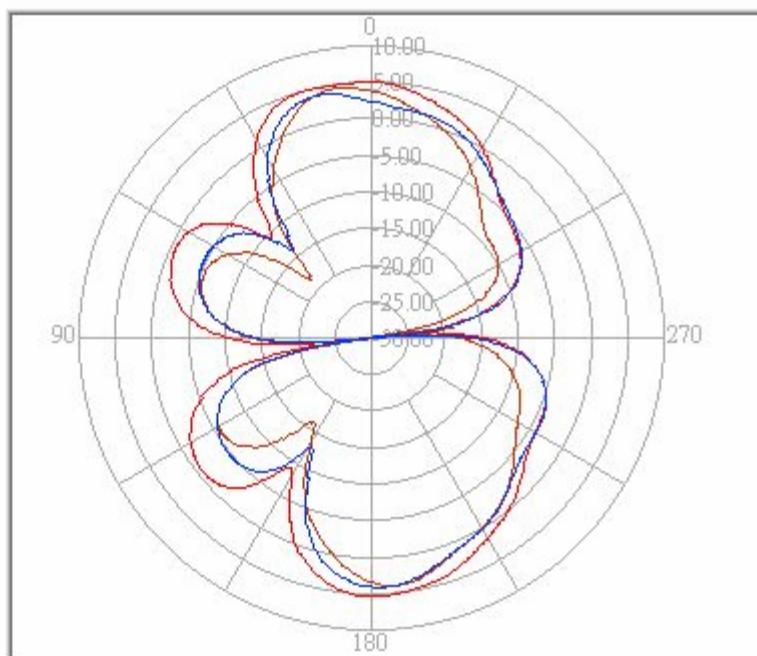


萬旭電業股份有限公司

**Model No:** Ituner

**Antenna Position:** Horizontal

**Test Mode:** E-Plane



Freq(MHz)	peak(dBi)	Angle(°)	Avg(dBi)
2400.00	4.52	352.02	-2.07
2450.00	5.43	179.30	0.34
2485.00	4.18	177.89	-1.55

# Material Data Sheet

## RG-178 Coaxial Cable

COPARTNER WIRE& CABLE MFG.CORP

### SPECIFICATION

Xintang Road 68#, Changling Industrial Area, Xin tian Village, Fuyong County,  
Baoan District of Shenzhen, Guangdong, China  
TEL: 86-755-2731-2988, 2731-2746 FAX: 86-755-2731-2736

**CUSTOMER:** 萬旭

**STYLE:** COAXIAL CABLE

**SPEC.:** 1C+B RG178B/U

**PART NO.:** 3870130130

**CUSTOMER CODE:** \_\_\_\_\_

**DATE :** 2004/5/7

**REVISION:** A

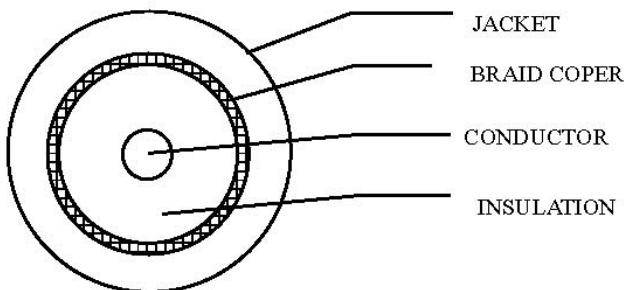
**TOTAL PAGES:** 3

COPARTNER SIGNATURE	CUSTOMER APP CUSTOMER P/N
PREPARED BY:LXY	CHECKED BY:
CHECKED BY:	APPROVED BY:
APPROVED BY :	DATE:

CABLE CONSTRUCTION(電纜結構):

ITEM(結構項目)		SPECIFICATION(規格說明)
CONDUCTOR 導體	AWG(線規)	30AWG
	MATERIAL(材質)	SCCS
	COND.SIZE(尺寸)	7/0.102±0.008 mm
INSULATION 絕緣體	MIN.AVGTHICK(最小厚度)	0.20 mm
	MATERIAL(材質)	FEP LOW TOXIC
	O . D(外徑)	0.86±0.05 mm
	N O.(線數)	1C
AL.MYLAR 鋁箔	COVERAGE(遮蔽率)	/
	OVERLAP(重疊率)	/
MYLAR 麥拉	COVERAGE(遮蔽率)	/
	OVERLAP(重疊率)	/
DRAIN 地線	AWG(線規)	/
	MATERIAL(材質)	/
	SIZE(尺寸)	/
BRAID 編織 COPPER	MATERIAL(材質)	TINNED COPPER
	SIZE(尺寸)	16x3/0.10±0.008 mm
SPIRAL 繩繞 COPPER	MATERIAL(材質)	/
	SIZE(尺寸)	/
COVERING 被覆體	MIN.AVGTHICK(最小厚度)	/
	MATERIAL(材質)	/
	O.D(外徑)	/
	NO.(線數)	/
FILLER 填充	MATERIAL(材質)	/
LAYER 集合	DIRECTION(絞向)	/
	PITCH(絞距)	/
FOAMED PP TAPE 發泡 PP 膜	COVERAGE(遮蔽率)	/
	OVERLAP(重疊率)	/
AL.MYLAR 鋁箔	COVERAGE(遮蔽率)	/
	OVERLAP(重疊率)	/
PAPER 紙	COVERAGE(遮蔽率)	/
	OVERLAP	/
DRAIN 地線	AWG(線規)	/
	MATERIAL(材質)	/
	SIZE(尺寸)	/
BRAID(編織) COPPER	MATERIAL(材質)	/
	SIZE(尺寸)	/
SPIRAL(繩繞) COPPER	MATERIAL(材質)	/
	SIZE(尺寸)	/
JACKET 被覆體	MIN.AVGTHICK(最小厚度)	0.20 mm
	MATERIAL(材質)	FEP
	COLOUR(顏色)	ORANGE LOW TOXIC
	O . D(外徑)	1.80±0.10 mm
MARKING 印字	MARKING 印字	/

### CONSTRUCTION(構造)



### COLOR CODE:(顏色代碼)

NATURAL

### PHYSICAL PROPERTY & TRANSMISSION PERFORMANCE SPECIFICATIONS

#### Electric Characters(電氣特性)

1. Attenuation (normal): at 400MHz 29.0dB/100FT ;
2. Impedance test :  $50 \pm 3\Omega$  @TDR
3. DC-R: Conductor resistance:  $846 \Omega/\text{km}$  at  $20^\circ\text{C}$  MAX



## Test Report

COPARTNER TECH CORP.  
FLOOR 4, NO. 16, CHIEN PA ROAD, CHUNG HO CITY,  
TAIPEI COUNTY, TAIWAN, R. O. C.

Report No. : CE/2005/75189A  
Date : 2005/08/01  
Page : 1 of 4

**The following merchandise was (were) submitted and identified by the client as :**

Type of Product : RG-178, RG-179, RG-316, 0.81mm, 1.13mm, 1.27mm,  
1.32mm, 1.37mm  
Sample Received : 2005/07/25  
Testing Date : 2005/07/25 TO 2005/08/01

---

**Test Result** : - Please see the next page -

  
Daniel Yeh, M.R. / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

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## Test Report

COPARTNER TECH CORP.  
FLOOR 4, NO. 16, CHIEN PA ROAD, CHUNG HO CITY,  
TAIPEI COUNTY, TAIWAN, R. O. C.

Report No. : CE/2005/75189A  
Date : 2005/08/01  
Page : 2 of 4

### Test Result

PART NAME NO.1 : TRANSPARENT PLASTIC JACKET (PLEASE REFER TO THE PHOTO ATTACHED)  
PART NAME NO.2 : SILVER COLORED METAL WIRE (PLEASE REFER TO THE PHOTO ATTACHED)

Test Item (s):	Unit	Method	MDL	Result	
				No.1	No.2
Monobromobiphenyl	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	---
Dibromobiphenyl	%		0.0005	N.D.	---
Tribromobiphenyl	%		0.0005	N.D.	---
Tetrabromobiphenyl	%		0.0005	N.D.	---
Pentabromobiphenyl	%		0.0005	N.D.	---
Hexabromobiphenyl	%		0.0005	N.D.	---
Heptabromobiphenyl	%		0.0005	N.D.	---
Octabromobiphenyl	%		0.0005	N.D.	---
Nonabromobiphenyl	%		0.0005	N.D.	---
Decabromobiphenyl	%		0.0005	N.D.	---
<b>Total PBBs(Polybrominated biphenyls)/Sum of above</b>	%		-	N.D.	---
Monobromobiphenyl ether	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	---
Dibromobiphenyl ether	%		0.0005	N.D.	---
Tribromobiphenyl ether	%		0.0005	N.D.	---
Tetrabromobiphenyl ether	%		0.0005	N.D.	---
Pentabromobiphenyl ether	%		0.0005	N.D.	---
Hexabromobiphenyl ether	%		0.0005	N.D.	---
Heptabromobiphenyl ether	%		0.0005	N.D.	---
Octabromobiphenyl ether	%		0.0005	N.D.	---
Nonabromobiphenyl ether	%		0.0005	N.D.	---
Decabromobiphenyl ether	%		0.0005	N.D.	---
<b>Total PBBEs(PBDEs)(Polybrominated biphenyl ethers)/Sum of above</b>	%		-	N.D.	---

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## Test Report

COPARTNER TECH CORP.

FLOOR 4, NO. 16, CHIEN PA ROAD, CHUNG HO CITY,  
TAIPEI COUNTY, TAIWAN, R. O. C.

Report No. : CE/2005/75189A

Date : 2005/08/01

Page : 3 of 4

Test Item (s):	Unit	Method	MDL	Result	
				No.1	No.2
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.	N.D.

NOTE : (1) N.D. = Not detected (<MDL)

(2) ppm = mg/kg

(3) MDL = Method Detection Limit

(4) " - " = No Regulation

(5) " --- " = Not Applicable

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SGS TAIWAN LIMITED

NO. 136-1, Wu Kung Road, WuKu Industrial Zone, Taipei county, Taiwan.  
(086-2) 22993939 (086-2) 2299-3237 [www.sgs.com.tw](http://www.sgs.com.tw)

## Test Report

COPARTNER TECH CORP.  
FLOOR 4, NO. 16, CHIEN PA ROAD, CHUNG HO CITY,  
TAIPEI COUNTY, TAIWAN, R. O. C.

Report No. : CE/2005/75189A  
Date : 2005/08/01  
Page : 4 of 4



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		70°C x 22hr	%	54
Hardness	ASTM D2240	shore A		
		shore D		55

\*Note : 1)The values of properties in the above table have been obtained by the test pieces(natural color) manufactured under certain of injection.

2)The listed values should be used for referential purposed only.

## KEYFLEX BT-1055D

Ester type TPE



Item	Test method	Test Condition	Unit	Value
<b>PHYSICAL</b>				
Specific Gravity	ASTM D297	23°C		1.19
Melt Index	ASTM D1238	200°C/2.16kg	g/10min	28
Density	ASTM D1505	Density Gradient Tube	g/10min	
Water Absorbance	ASTM D570	23°C	%	0.5
Mold Shrinkage	ASTM D955		%	1.2
<b>MECHANICAL</b>				
Tensile Strain at Break	ASTM D412	500mm/min	kg/cm <sup>2</sup> MPa	340 33.3
Tensile Elongation	ASTM D412	500mm/min	%	650
Tensile Strength	ASTM D638	500mm/min	kg/cm <sup>2</sup> MPa	140 13.7
5% Tensile Stress	ASTM D638	500mm/min	kg/cm <sup>2</sup> MPa	65 6.4
Flexural Modulus(Initial)	ASTM D790	15mm/min	kg/cm <sup>2</sup> MPa	2,100 206
Tear Strength	ASTM D624	JIS B type	kg/cm	150
Izod Impact Strength (Notched)	ASTM D256	23°C	kg·cm/cm	NB
			J/m	NB
		-40°C	kg·cm/cm	20
			J/m	NB
Elongation	ASTM D395		%	
Compression Set	ASTM D395	25°C x 22hr	%	
		70°C x 22hr	%	54
Hardness	ASTM D2240	shore A		
		shore D		55

\*Note : 1)The values of properties in the above table have been obtained by the test pieces(natural color) manufactured under certain of injection.

2)The listed values should be used for referential purposed only.



## Test Report

WGJ COMPANY LTD.  
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,  
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439  
Date : 2005/07/11  
Page : 1 of 4

**The following merchandise was (were) submitted and identified by the client as :**

Type of Product : LG KEYFLEX TPEE  
Style/Item No : BT1055DNC, BT1063DNC  
Sample Received : 2005/07/04  
Testing Date : 2005/07/04 TO 2005/07/11

=====

**Conclusion** : The test results of Pb, Cd, Hg, Cr+6, PBB and PBDE for the submitted sample comply with the requirements of RoHS (2002/95/EC).

  
Daniel Yeh, M.R. Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

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## Test Report

WGJ COMPANY LTD.  
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,  
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439  
Date : 2005/07/11  
Page : 2 of 4

### Test Result

PART NAME NO.1 : WHITE PLASTIC PELLETS (PLEASE REFER TO THE PHOTO ATTACHED)

Test Item (s):	Unit	Method	MDL	PASS	
				Result No.1	Limit of ROHS
Monobromobiphenyl	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	-
Dibromobiphenyl	%		0.0005	N.D.	-
Tribromobiphenyl	%		0.0005	N.D.	-
Tetrabromobiphenyl	%		0.0005	N.D.	-
Pentabromobiphenyl	%		0.0005	N.D.	-
Hexabromobiphenyl	%		0.0005	N.D.	-
Heptabromobiphenyl	%		0.0005	N.D.	-
Octabromobiphenyl	%		0.0005	N.D.	-
Nonabromobiphenyl	%		0.0005	N.D.	-
Decabromobiphenyl	%		0.0005	N.D.	-
<b>Total PBBs (Polybrominated biphenyls)/Sum of above</b>	%		-	N.D.	0.1
Monobromobiphenyl ether	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	-
Dibromobiphenyl ether	%		0.0005	N.D.	-
Tribromobiphenyl ether	%		0.0005	N.D.	-
Tetrabromobiphenyl ether	%		0.0005	N.D.	-
Pentabromobiphenyl ether	%		0.0005	N.D.	-
Hexabromobiphenyl ether	%		0.0005	N.D.	-
Heptabromobiphenyl ether	%		0.0005	N.D.	-
Octabromobiphenyl ether	%		0.0005	N.D.	-
Nonabromobiphenyl ether	%		0.0005	N.D.	-
Decabromobiphenyl ether	%		0.0005	N.D.	-
<b>Total PBDEs(PBDEs)(Polybrominated biphenyl ethers)/Sum of above</b>	%		-	N.D.	0.1

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## Test Report

WGJ COMPANY LTD.  
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,  
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439  
Date : 2005/07/11  
Page : 3 of 4

Test Item (s):	Unit	Method	MDL	PASS	
				Result No.1	Limit of ROHS
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.	1000
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.	100
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.	1000
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.	1000

NOTE : (1) N.D. = Not detected (<MDL)  
(2) ppm = mg/kg  
(3) MDL = Method Detection Limit  
(4) " - " = No Regulation

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## Test Report

WGJ COMPANY LTD.  
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,  
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439  
Date : 2005/07/11  
Page : 4 of 4



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SGS TAIWAN LIMITED

NO. 136-1, Wu Kung Road, WuKu Industrial Zone, Taipei county, Taiwan.  
(886-2) 22993939 f(886-2) 2299-3237 [www.sgs.com.tw](http://www.sgs.com.tw)

- Hinge (Base/Holder) – PC+ALLOY



### Technical Data

#### SHINBLEND® A724NA

High Impact Grade / 超韧級 AD4011

Mechanical properties	機械性質	Unit	Test Method <sup>i</sup>	Values
Izod Impact(Notched) 23°C	衝擊強度	Kg-cm/cm	ASTM D256	85
-20°C	衝擊強度	Kg-cm/cm	ASTM D256	70
-40°C	衝擊強度	Kg-cm/cm	ASTM D256	65
Tensile Strength	拉伸強度	Kg/cm <sup>2</sup>	ASTM D638	540
Elongation	拉伸率	%	ASTM D638	100
Flexural Strength	彎曲強度	Kg/cm <sup>2</sup>	ASTM D790	800
Flexural Modulus	彎曲模數	Kg/cm <sup>2</sup>	ASTM D790	20000
Thermal properties	熱性質			
Heat Deflection Temperature	熱變形溫度		ASTM D648	
66psi	°C			-
264psi	°C			100
Flammability	防火性	-	UL94	-
Melting Point	熔點	°C	DSC	223
Electrical properties	電氣性質			
Dielectric Strength	介電強度	KV/MM	ASTM D149	-
Dielectric Constant	介電常數	...	ASTM D150	-
Volume Resistivity	體積電阻	Ω-CM	ASTM D257	-
Other properties	其它性質			
Specific Gravity	比重	-	ASTM D792	1.19
Water Absorption	吸水率	%	ASTM D570	0.14
Mold Shrinkage	成形收縮率		ASTM D955	
Flow	流動方向	%		0.4~0.6
Cross Flow	垂直方向	%		0.5~0.7

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## Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION  
8F., NO. 123, SEC. 2, NANKING E. RD., TAIPEI, TAIWAN

Report No. : CE/2005/10305  
Date : 2005/01/11  
Page : 1 of 3

**The following merchandise was (were) submitted and identified by the client as :**

Type of Product : THERMOPLASTIC ALLOY RESIN  
Style/ Item No : SHINITE ®ALLOY A724NA  
Manufacturer/Vendor : SHINKONG SYNTHETIC FIBERS CORPORATION  
Sample Received : 2005/01/04  
Testing Date : 2005/01/04 TO 2005/01/11

---

Test Result : - Please see the next page -

  
Daniel Yeh, M.R. Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

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# Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION  
8F., NO. 123, SEC. 2, NANKING E. RD., TAIPEI, TAIWAN

Report No. : CE/2005/10305  
Date : 2005/01/11  
Page : 2 of 3

## Test Result

PART NAME NO.1 : WHITE PLASTIC PELLETS (PLEASE REFER TO THE PHOTO ATTACHED)

Test Item (s):	Unit	Method	MDL	Result
				No.1
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.

Test Item (s):	Unit	Method	MDL	Result
				No.1
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.

NOTE• (1) N.D. = Not detected (<MDL)  
 (2) ppm = mg/kg  
 (3) MDL = Method Detection Limit

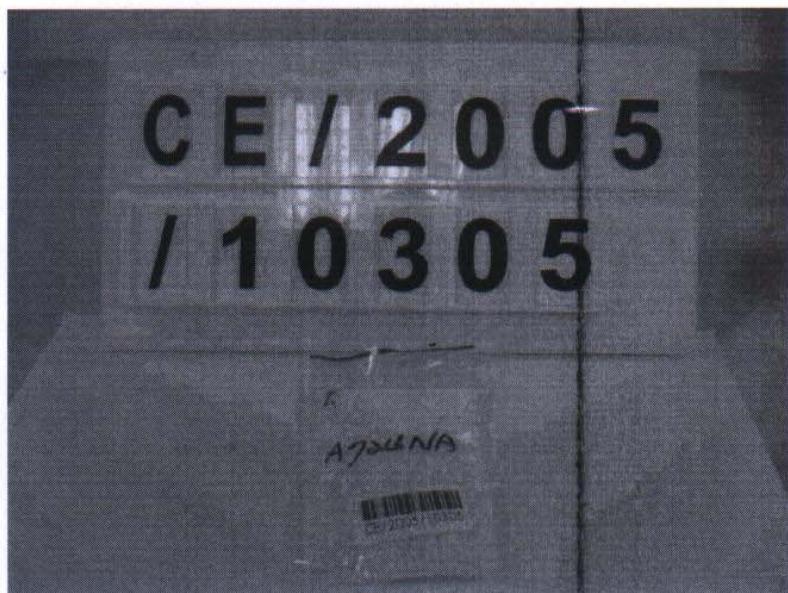
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## Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION  
8F., NO. 123, SEC. 2, NANKING E. RD., TAIPEI, TAIWAN

Report No. : CE/2005/10305  
Date : 2005/01/11  
Page : 3 of 3



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# Spring

SGS

## Test Report

福克偲國際股份有限公司  
 揚申精密電子(蘇州)有限公司  
 \*220板橋市四川路一段29-2號1樓  
 \*江蘇省吳江市彌陀鎮汾湖經濟開發區

報告號碼 : CE/2005/15308  
 日期 : 2005/02/04  
 頁數 : 1 of 1

以下測試樣品乃供應廠商所提供之確認：

樣品名稱	:	磷銅線
收件日期	:	2005/01/28.
測試日期	:	2005/01/28 TO 2005/02/04

### 測試結果

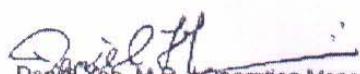
測試部位 NO.1 : 銅色金屬(請參照附件圖片)

測試項目:	單位	測試方法	偵測極限值	結果
				NO.1
六價鉻	ppm	依照US EPA 7196A及3060A方法	2	N.D.
鎘	ppm	依照 EN1122 方法B:2001或其他酸消化方法,用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	N.D.
汞	ppm	依照 US EPA 3052 方法或其他酸消化方法,用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	N.D.
鉛	ppm	依照 US EPA 3050B 方法或其他酸消化方法,用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	24.9

備註: (1) N.D. = Not detected.(<MDL) / 未檢出(低於偵測極限值)

(2) ppm = mg/kg / 百萬分之一

(3) MDL= Method Detection Limit(偵測極限值)

  
 Daniel Yeh, M.R. / Operation Manager  
 Signed for and on behalf of  
 SGS TAIWAN LTD.

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# Sleeve

SGS

BB.

## Test Report

No.: GZSCR050209416A.P

Date: MAR 03, 2005

Page 1 of 1

SHEN ZHEN HUAYILIN CO., LTD  
5/F BUILDING, BAI SHI ZHOU  
YUAN ZI NING INDUSTRIAL ZONE,  
SHAHE TOWN, SHENZHEN CITY

Report on the submitted sample said to be 80#(45#)

SGS Ref No	SZ050202512F-C-5 2
Sample Receiving Date	FFB 25, 2005
Testing Period	FFB 25, 2005 TO MAR 03, 2005
Test Requested	As specified by client, to determine the Lead, Cadmium, Mercury & Chromium content in the submitted sample
Test Method	Lead content - In house method, with reference to EPA method 3050B-1996 Cadmium content - In house method, with reference to BS EN1122: 2001 method B Mercury & Chromium content - In house method, with reference to EPA 3052-1996. Analysis was performed by Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES).

## RESULTS

	Golden metal pin
Lead content (Pb)(ppm)	72
Cadmium Content (Cd)(ppm)	4
Mercury Content (Hg)	N.D.
Chromium Content (Cr)	N.D.

Note: - N.D. = Not Detected (< 2 ppm)  
- ppm = mg/kg

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

Signed for and on behalf of  
SGS-GSTC Ltd.

He Xiaoyin, Jane  
Tech. Manager

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GZCR050209416A.P

07/02/05 - 14:27

SGS-GSTC Ltd.



## Test Report

No.: GZSCR050209418/LP

Date: MAR 03, 2005

Page 1 of 1

SHEN ZHEN HUAYNIEN CO.,LTD.  
5/F BUILDING, BAI SHI ZHOU  
YUAN ZI NENG INDUSTRIAL ZONE  
SHAHE TOWN, SHENZHEN CITY

Report on the submitted sample said to be 黃鋼管

SGS Ref No. : SZ050202512LC-5-4

Sample Receiving Date : FEB 25, 2005

Testing Period : FEB 25, 2005 TO MAR 03, 2005

Test Requested : As specified by client, to determine the Lead, Cadmium, Mercury & Chromium content in the submitted sample

Test Method : Lead content -- In house method, with reference to EPA method 3050B: 1996 .  
Cadmium content -- In house method, with reference to BS EN1122: 2001 method B .  
Mercury & Chromium content -- In house method, with reference to EPA 3052: 1996 .  
Analysis was performed by Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES).

## RESULTS

	Golden metal tube
Lead content (Pb)(ppm)	44
Cadmium Content (Cd)	N.D.
Mercury Content (Hg)	N.D.
Chromium Content (Cr)	N.D.

Note : N.D. = Not Detected (< 2 ppm)

ppm = mg/kg

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

Signed for and on behalf of  
SGS-CSTC Ltd

He Xiaoyan, Jane  
Tech Manager

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## Test Report

No.: SZTYR050308888/LP

Date: MAR 18, 2005

Page 1 of 1

HIP WO HONG KONG  
ELECTROPLATING FTY.  
3<sup>RD</sup> BUILDING, 3<sup>RD</sup> ROOM,  
2<sup>ND</sup> INDUSTRIAL AREA,  
DA WANG SHAN, SHA JIN,  
BAO AN, SHENZHEN

Report on the submitted sample said to be 铅模液

Sample Receiving Date : MAR 12, 2005

Testing Period : MAR 12, 2005 TO MAR 16, 2005

Test Requested : To determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample.

Test Method : Lead content - with reference to EPA Method 3050B: 1996 / other acid digestion.  
Cadmium content - with reference to EN1122: 2001 method B / other acid digestion.  
Mercury content - with reference to EPA Method 3052: 1996 / other acid digestion.  
Hexavalent Chromium content - with reference to EPA Method 3080A: 1996 / other wet digestion.  
Analysis was performed by Atomic Absorption Spectrometer (AAS) and Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES).

Results : Transparent green liquid

Lead Content	N.D.
Cadmium Content	N.D.
Mercury Content	N.D.
Hexavalent Chromium Content	N.D.

Note: - N.D. = Not Detected (< 2 ppm)

- ppm = mg/kg

- Results shown are of the total weight of liquid sample.

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

Signed for and on behalf of  
SGS-CSTC Ltd.



Liu Shuzhen, Date

Dept. Manager

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SZL 314061



## Test Report

WANSHIH ELECTRONIC CO., LTD.  
3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT  
TAIPEI HSIEN, TAIWAN. R. O. C.

報告號碼 : CE/2005/B4807  
日期 : 2005/11/28  
頁數 : 1 of 2

以下測試樣品乃供應廠商所提供之確認：

樣品名稱 : 固定鉚釘 (黑鍍)  
收件日期 : 2005/11/21.  
測試日期 : 2005/11/21 TO 2005/11/28

### 測試結果

測試部位 NO.1 : 黑色鉚釘

測試項目	單位	測試方法	偵測極限值	結果
				NO.1
六價鉻	ppm	依照US EPA 3060A方法, 用UV-VIS 做分析	2	N.D.
鎘	ppm	依照 EN1122 方法B:2001或其他酸 消化方法, 用感應耦合電漿原子發 射光譜儀(ICP-AES)做分析	2	N.D.
汞	ppm	依照 US EPA 3052 方法或其他酸 消化方法, 用感應耦合電漿原子發 射光譜儀(ICP-AES)做分析	2	N.D.
鉛	ppm	依照 US EPA 3050B 方法或其他酸 消化方法, 用感應耦合電漿原子發 射光譜儀(ICP-AES)做分析	2	29.5

備註：(1) N.D. = Not detected.(<MDL) / 未檢出(低於偵測極限值)

(2) ppm = mg/kg / 百萬分之一

(3) MDL= Method Detection Limit(偵測極限值)

Daniel Yen, M.R. / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

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## Test Report

WANSHIH ELECTRONIC CO., LTD.  
3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT  
TAIPEI HSIEN, TAIWAN. R. O. C.

報告號碼 : CE/2005/B4807  
日期 : 2005/11/28  
頁數 : 2 of 2



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# Hold



## Test Report

No. 2030558/EC

Date : Jul 28 2005

Page 1 of 2

XING WANG PLASTICS METAL PRODUCTS FACTORY  
NA NAN VILLAGE, YOU GAN PU FENG GANG TOWN DONGGUAN

Report on the submitted sample said to be PC / ABS.

SGS Job No. : 1820062  
SGS Ref. No. : SZTYR050724039/LP  
Item No. : PC + ABS C6600 A4257  
Supplier : PREMIO  
Manufacturer : XING WANG PLASTICS METAL PRODUCTS FACTORY  
Sample Receiving Date : JUL 19 2005  
Testing Period : JUL 20 - 25 2005

Test Requested : 1) To determine the Cadmium Content in the submitted sample.  
2) To determine the Lead Content in the submitted sample.  
3) To determine the Mercury Content in the submitted sample.  
4) To determine the Hexavalent Chromium Content on the submitted sample.  
5) To determine PBBs (polybrominated biphenyls) and PBDEs (Polybrominated diphenylethers) of the submitted sample.

Test Method : 1) With reference to BS EN 1122:2001, Method B, analysis was performed by Inductively Coupled Argon Plasma-Atomic Emission Spectrometry (ICP-AES).  
2) With reference to EPA Method 3050B/ 3051/ 3052. Analysis was performed by Inductively Coupled Argon Plasma-Atomic Emission Spectrometry (ICP-AES).  
3) With reference to EPA Method 3051/ 3052. Analysis was performed by Inductively Coupled Argon Plasma-Atomic Emission Spectrometry (ICP-AES).  
4) With reference to EPA Method 3060A & 7196A. The samples were alkaline digested by using EPA Method 3060A, and then analyzed by using Colorimetric method 7196A.  
5) With reference to SGS in-house method. Analysis was performed by GC/MS or LC/ MS.

Test Results : 1-5) Please refer to next page.

Signed for and on behalf of  
SGS Hong Kong Ltd

Wan Chi Wai, Leo  
Technical Manager

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SGS Hong Kong Ltd. | 5/F & 28/F - 29/F, Metropolis Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. | +852 2334 4481 | +852 2784 3128 | [www.hksgs.com](http://www.hksgs.com)

H12107465

**Test Report**

No. 2030558/EC

Date : Jul 28 2005

Page 2 of 2

**Test Results**

<u>Element</u>	<u>White Plastic</u>	<u>Detection Limit</u>
1) Cadmium (Cd)	ND	2 ppm
2) Lead (Pb)	ND	2 ppm
3) Mercury (Hg)	ND	2 ppm
4) Hexavalent Chromium (Cr <sup>6+</sup> )	ND	2 ppm

(Results shown are of the total weight of samples)

Note : ppm = mg/kg

ND = Not Detected

Not detected was reported when the reading is less than detection limit value

5)

<b>Flame Retardants</b>	<b>White Plastic</b>	<b>Detection Limit</b>
<b>Polybrominated Biphenyls (PBBs)</b>	—	—
Monobromobiphenyl	ND	5 ppm
Dibromobiphenyl	ND	5 ppm
Tribromobiphenyl	ND	5 ppm
Tetrabromobiphenyl	ND	5 ppm
Pentabromobiphenyl	ND	5 ppm
Hexabromobiphenyl	ND	5 ppm
Heptabromobiphenyl	ND	5 ppm
Octabromobiphenyl	ND	5 ppm
Nonabromobiphenyl	ND	5 ppm
Decabromobiphenyl	ND	5 ppm
<b>Polybrominated Diphenyl ethers (PBDEs)</b>	—	—
Monobromodiphenyl ether	ND	5 ppm
Dibromodiphenyl ether	ND	5 ppm
Tribromodiphenyl ether	ND	5 ppm
Tetrabromodiphenyl ether	ND	5 ppm
Pentabromodiphenyl ether	ND	5 ppm
Hexabromodiphenyl ether	ND	5 ppm
Heptabromodiphenyl ether	ND	5 ppm
Octabromodiphenyl ether	ND	5 ppm
Nonabromodiphenyl ether	ND	5 ppm
Decabromodiphenyl ether	ND	5 ppm

Note : ppm = mg/kg

ND = Not Detected

Not detected was reported when the reading is less than detection limit value

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

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