

# 產 品 規 格 承 認 書

## Specification For Approval

日 期：2005 / 03 / 04

Date

編 號：STA - 0789

File No.

承認廠商：友勁科技股份有限公司

Customer

製造廠商：英碩企業股份有限公司

Manufacturer

型號品名：SMA 90 ° Type(母頭公針)

Part Number

Description

INVAX P/N : CR-RSPRF5A2727B

廠商審核：

Approved By

# Invax

英碩企業股份有限公司

台北市忠孝東路五段 815 號 4 樓  
Tel: (02)2788-5218 Fax: (02)2783-1658

Web Site: [www.invax.com.tw](http://www.invax.com.tw)  
E-mail: [info@invax.com.tw](mailto:info@invax.com.tw)



MTC38668

- 一、測試項目：分光分析（鋅合金）  
二、使用設備：Fisons ARL 3460 Optical Emission Spectrometer 分光儀  
三、測試方法：ASTM E-2 SM 6-15 (92)  
四、測試環境：溫度 23°C  
五、測試結果：

編號	Composition (%)						
	鋅 Zn	鐵 Fe	鋁 Al	鎂 Mg	銅 Cu	鉛 Pb	錫 Sn
鋅合金 3F	95.70	<0.001	3.84	0.029	0.40	0.002	0.002

註：&lt;小於表示分析能力超過範圍。



金 全 福 企 業 有 限 公 司  
JCF CHUAN FUH ENT.CO/LTD.

鋅合金

3F

—以下空白—

Handwritten signature and date: 27/2/02





# 化學實驗室委託試驗報告表

委託者	金全福企業有限公司
報告編號	MTC38669
工令單號	L93SE000-3775
金試字號	93.0063
取樣者	—
樣品名稱	鋅合金3F
工程名稱	—
來樣日期	2004/11/30
發發日期	2004/12/05

本報告含附頁共 2 頁。

羅家軒

張奇明

報告簽署人 (Report Authorized Person)

檢驗員 (Inspector)

- 注意
1. 送檢樣品經實驗室測試結果如附頁。
  2. 本報告僅對送檢樣品負責。
  3. 本報告未經書面許可不得複製或轉錄。
  4. 本報告分發使用無效。

## 金屬工業研究發展中心

高雄市楠梓區811高楠公路1001號

# 宮前五金股份有限公司

## 檢驗報告表

編號: 881130

88年11月25日

客 戶		康碩電子廠		
品 名		FREE CUTTING BRASS ROD		丸2.0 m/m
規 格		JIS H3250 C3604 BD		
項 目	數 據	標 準 值	實 測 值	備 註
化 學 成 份 %	Cu	57.0-61.0	59.18	<div data-bbox="1066 1435 1374 1653" data-label="Text"> <p>康碩電子有限公司 2003 9. 11 工 程 部 發 文</p> </div>
	Pb	1.8 - 3.7	2.97	
	Fe	< 0.5	-----	
	Sn+Fe	< 1.2	0.71	
	Zn	REMAINDER	REMAINDER	
其 它				<div data-bbox="1023 1711 1369 1944" data-label="Image"> </div>

App Name :

數據	$\mu$ in Au	日期 / 時間
1	5.68	2003/8/26 01:14
2	5.43	2003/8/26 01:15
3	5.73	2003/8/26 01:15
4	6.06	2003/8/26 01:16
5	5.34	2003/8/26 01:16

康碩電子有限公司  
2003 9. 11  
工程部發文

TO: 康碩  
貴司物料: SMA 針芯  
經 X-RAY 膜厚測試儀測試,  
鍍層厚度已符合貴司要求.

測試員	雷華友
審核	李群英
確認	王桂子

App Name :

數據	$\mu$ in Au	日期 / 時間
1	1.38	2003/9/7 13:10
2	1.42	2003/9/7 13:11
3	1.50	2003/9/7 13:12
4	1.39	2003/9/7 13:12
5	1.48	2003/9/7 13:13

康碩電子有限公司  
 2003.9.11  
 工程部發文

TO: 康碩  
 貴司物料: SMA 外殼,  
 經 X-RAY 膜厚測試儀測試,  
 鍍層厚度已符合貴司要求:

測試員	禹華友
審核	李群英
確認	

# 各種充てん材入りPTFEの特性

単位	測定条件	充てん材 (重量%)	純PTFE	ガラスファイバー15%	ガラスファイバー20%	ガラスファイバー25%	グラファイト15%
				G15	G20	G25	GR15
比重	25°C		2.17	2.23	2.24	2.26	2.16
熱伝導率	25°C		0.20	0.29	0.30	0.34	0.34
熱膨脹係数	25~100°C	MD	11	11	10	9	10
		CD	10	8	7	6	8
	25~150°C	MD	12	12	11	10	11
		CD	11	8	8	7	9
	25~200°C	MD	14	13	12	11	12
		CD	12	9	9	7	9
	25~250°C	MD	17	14	13	13	14
		CD	16	10	10	9	11
引張強さ	JISK6891		330	290	234	220	200
伸び	JISK6891		350	340	338	310	325
圧縮強さ	0.2%オフセット	MD	—	—	85	—	—
	24°C	CD	73	74	76	80	100
	1%変形	MD	—	—	63	—	—
	24°C	CD	44	50	60	80	70
圧縮弾性率	25%変形	MD	—	—	254	—	—
	24°C	CD	280	280	283	290	300
		MD	—	—	—	—	—
		CD	5.7×10 <sup>3</sup>	8.8×10 <sup>3</sup>	9.6×10 <sup>3</sup>	10.6×10 <sup>3</sup>	7.8×10 <sup>3</sup>
曲げ強さ (弾性率)	ASTMD-790	CD	3.5~ 6.3×10 <sup>3</sup>	21.8×10 <sup>3</sup>	19.0×10 <sup>3</sup>	16.7×10 <sup>3</sup>	—
圧縮クリープ 1. 変形率	ASTMD-621 140kgf/cm <sup>2</sup> 25°C 24hrs 2	MD	9.5	8.8	8.5	7.9	5.0
		CD	—	—	—	—	—
	70kgf/cm <sup>2</sup> 25°C・24hrs	MD	4.8	4.4	3.6	3.5	3.1
		CD	—	—	—	—	—
2. 永久変形	140kgf/cm <sup>2</sup> 25°C・24hrs	MD	7.0	6.9	6.7	6.2	3.8
		CD	—	—	11.5	—	—
	70kgf/cm <sup>2</sup> 25°C・24hrs	MD	4.6	3.8	3.5	3.3	3.0
		CD	—	—	—	—	—
硬度	ショア-D		58	58	59	60	58
摩擦係数(動)			0.22	0.24	0.24	0.26	0.23
摩擦係数(静)			0.045	0.065	0.073	0.085	0.058
摩耗係数	65hrs鈴木式 試験機による		2×10 <sup>-2</sup>	1.2×10 <sup>-5</sup>	1.1×10 <sup>-5</sup>	1.0×10 <sup>-5</sup>	6.7×10 <sup>-5</sup>
絶縁耐力	JISD2120(油中)		46.4	17.4	15.5	13.7	4.1
誘電率	JISD6911 10 <sup>3</sup> Hz		2.06	2.64	2.91	2.94	—
	10 <sup>6</sup> Hz		2.06	2.80	2.77	2.89	—
吸水率	3.2mmt24H ASTM D570		0.01>	0.015	0.014	0.013	0

※MDは成形加工に平行方向、CDは成形加工に直角方向

※この表はフッ素樹脂メーカーのデータ等を基にした数値も含まれます。

数値は、ある一定環境において行われた実験データで、環境の違いにより若干異なることがあります。(規格値ではありません)

康碩電子有限公司

2003.9.11

工程部發文





## Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F, No.815, CHUNG HSAIO EAST RD. SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 1 of 5

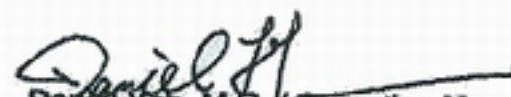
**The following merchandise was (were) submitted and identified by the client as :**

Type of Product : ANTENNA  
Style/Item No. : EM SERIES; IM SERIES; NB SERIES; AN SERIES  
Sample Received : 2004/01/05 & 2004/04/23 & 2004/06/11 & 2004/06/24 &  
2004/12/09 & 2005/01/26  
Testing Date : 2004/01/05 TO 2004/01/06 & 2004/04/23 TO 2004/04/28 &  
2004/06/11 TO 2004/06/21 & 2004/06/24 TO 2004/07/01 &  
2004/12/09 TO 2004/12/16 & 2005/01/26 TO 2005/01/28

=====

Test Result : - Please see the next page -

\*This report is combined with reports of SZTYR050102512/LP & CE/2004/62767 &  
GZSCR040100230/LP & CE/2004/61520 & GZSCR040413274/LP\*

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

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Page : 2 of 5

### Test Result

PART NAME NO.1 : BRASSY COLOR METAL BAR(SZTYR050102512/LP)  
PART NAME NO.2 : BLACK PLASTIC SHEET(GZSCR040100230/LP)  
PART NAME NO.3 : TAN TRANSPARENT LIQUID(GZSCR040413274/LP)  
PART NAME NO.4 : BLACK PLASTIC JACKET(KHCX-32AWG-SB-TA)(CE/2004/61520)  
PART NAME NO.5 : TRANSPARENT FEP JACKET(CE/2004/C1640)  
PART NAME NO.6 : WHITE PALSTIC(CE/2004/62767)

Test Item (s):	Unit	Method	MDL	Result				
				No.1	No.2	No.3	No.4	No.5
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	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.	N.D.
PBBs(PBDEs)(Polybrominated biphenyl ethers)	%	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.	N.D.

Test Item (s):	Unit	Method	MDL	Result				
				No.1	No.2	No.3	No.4	No.5
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.	---	N.D.	N.D.	N.D.
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	22.0	N.D.	N.D.	N.D.	N.D.

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Page : 3 of 5

Test Item (s):	Unit	Method	MDL	Result				
				No.1	No.2	No.3	No.4	No.5
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	24600.0	6.0	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.	---	N.D.	N.D.	N.D.

Test Item (s):	Unit	Method	MDL	Result
				No.6
AZO		As per LMBG 8202-2		
4-AMINODIPHENYL (CAS NO.92-67-1)	ppm	Analysis was performed by GC/MS.	3	N.D.
BENZIDINE (CAS NO.92-87-5)	ppm	Analysis was performed by GC/MS.	3	N.D.
4-CHLORO-O-TOLUIDINE (CAS NO.95-69-2)	ppm	Analysis was performed by GC/MS.	3	N.D.
2-NAPHTHYLAMINE (CAS NO.91-59-8)	ppm	Analysis was performed by GC/MS.	3	N.D.
O-AMINOAZOTOLUENE (CAS NO.97-56-3)	ppm	Analysis was performed by GC/MS.	3	N.D.
2-AMINO-4-NITROTOLUENE (CAS NO.106-47-8)	ppm	Analysis was performed by GC/MS.	3	N.D.
2,4-DIAMINOANISOLE (CAS NO.615-05-4)	ppm	Analysis was performed by GC/MS.	3	N.D.
4,4-DIAMINODIPHENYLMETHANE (CAS NO.101-77-9)	ppm	Analysis was performed by GC/MS.	3	N.D.
3,3-DICHLOROBENZIDINE (CAS NO.91-94-1)	ppm	Analysis was performed by GC/MS.	3	N.D.
3,3-DIMETHOXYBENZIDINE (CAS NO.119-90-4)	ppm	Analysis was performed by GC/MS.	3	N.D.
3,3-DIMETHYLBENZIDINE (CAS NO.119-93-7)	ppm	Analysis was performed by GC/MS.	3	N.D.

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Page : 4 of 5

Test Item (s):	Unit	Method	MDL	Result
				No.6
3,3-DIMETHYL-4,4-DIAMINODIPHENYLMETHANE (CAS NO.838-88-0)	ppm	Analysis was performed by GC/MS.	3	N.D.
P-CRESIDINE(2-METHOXY-5-METHYLANILINE) (CAS NO.120-71-8)	ppm	Analysis was performed by GC/MS.	3	N.D.
4,4-METHYLENE-BIS-(2-CHLORANILINE) (CAS NO.101-14-4)	ppm	Analysis was performed by GC/MS.	3	N.D.
4,4-OXYDIANILINE (CAS NO.101-80-4)	ppm	Analysis was performed by GC/MS.	3	N.D.
4,4-THIODIANILINE (CAS NO.139-65-1)	ppm	Analysis was performed by GC/MS.	3	N.D.
O-TOLUIDINE (CAS NO.95-53-4)	ppm	Analysis was performed by GC/MS.	3	N.D.
2,4-TOLUYLENDIAMINE (CAS NO.95-80-7)	ppm	Analysis was performed by GC/MS.	3	N.D.
2,4,5-TRIMETHYLANILINE (CAS NO.137-17-7)	ppm	Analysis was performed by GC/MS.	3	N.D.
O-ANISIDINE (CAS NO.90-04-0)	ppm	Analysis was performed by GC/MS.	3	N.D.
P-AMINOAZOBENZENE (CAS NO.60-09-3)	ppm	Analysis was performed by GC/MS.	3	N.D.

Test Item (s):	Unit	Method	MDL	Result
				No.6
Mirex(CAS NO:002385-85-5)	ppm	Analysis was performed by GC/MS.	4	N.D.

Test Item (s):	Unit	Method	MDL	Result
				No.6
PCBs(Polychlorinated Biphenyls)(CAS NO:001336-36-3)	ppm	With reference to USEPA 8082A. Analysis was performed by GC/ECD/MS.	0.5	N.D.

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Page : 5 of 5

Test Item (s):	Unit	Method	MDL	Result
				No.6
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	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.
PBBs(PBDEs)(Polybrominated biphenyl ethers)	%	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.

Test Item (s):	Unit	Method	MDL	Result
				No.6
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)  
(2) ppm = mg/kg  
(3) MDL = Method Detection Limit  
(4) " --- " = Not Applicable  
(5) " - " = No Regulation  
(6) \* = Results shown are of the adjusted analytical results  
(7) \*\* = Qualitative analysis (No Unit)  
(8) Negative = Undetectable / Positive = Detectable  
(9) The MDL is 5ppm for the single compound of CP

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