



Wistron NeWeb Corp.

APPROVAL SHEET

Customer Name: **AverMedia Technologies, Inc.**

Date: **2008/2/22**

Doc. Version: **0**

CUS P/N		
WNC P/N	XCI	
Description	802.11 b/g Single Band External Antenna	
Version	A00	

Provided By Wistron NeWeb Corp	Reviewed By Wistron NeWeb Corp	Approved By Customer
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Wistron NeWeb Corp.

1. Introduction

Cable for Test System

1. Application: 5dBi High Gain, 2.4GHz External Antenna with R/P SMA Plug

2. Revision History

Date	Version	Change Description
11/22/2007	A00	New Release

3. Product Spec.

3.1 Electrical Performance

3.2 Outline Drawing

WLAN Antenna (2400-2500MHz)



Date: 31 Jan 2008
Revision: 1
Test Site: Satimo 64 3D Chamber at WNC, Taiwan

Prepared By: Mike Hsieh
Reviewed By: Justin Shau
Approved By: K.H. Cheng

Content

- 1.0 VSWR (2:1) :**
Frequency : 2400MHz – 2500MHz

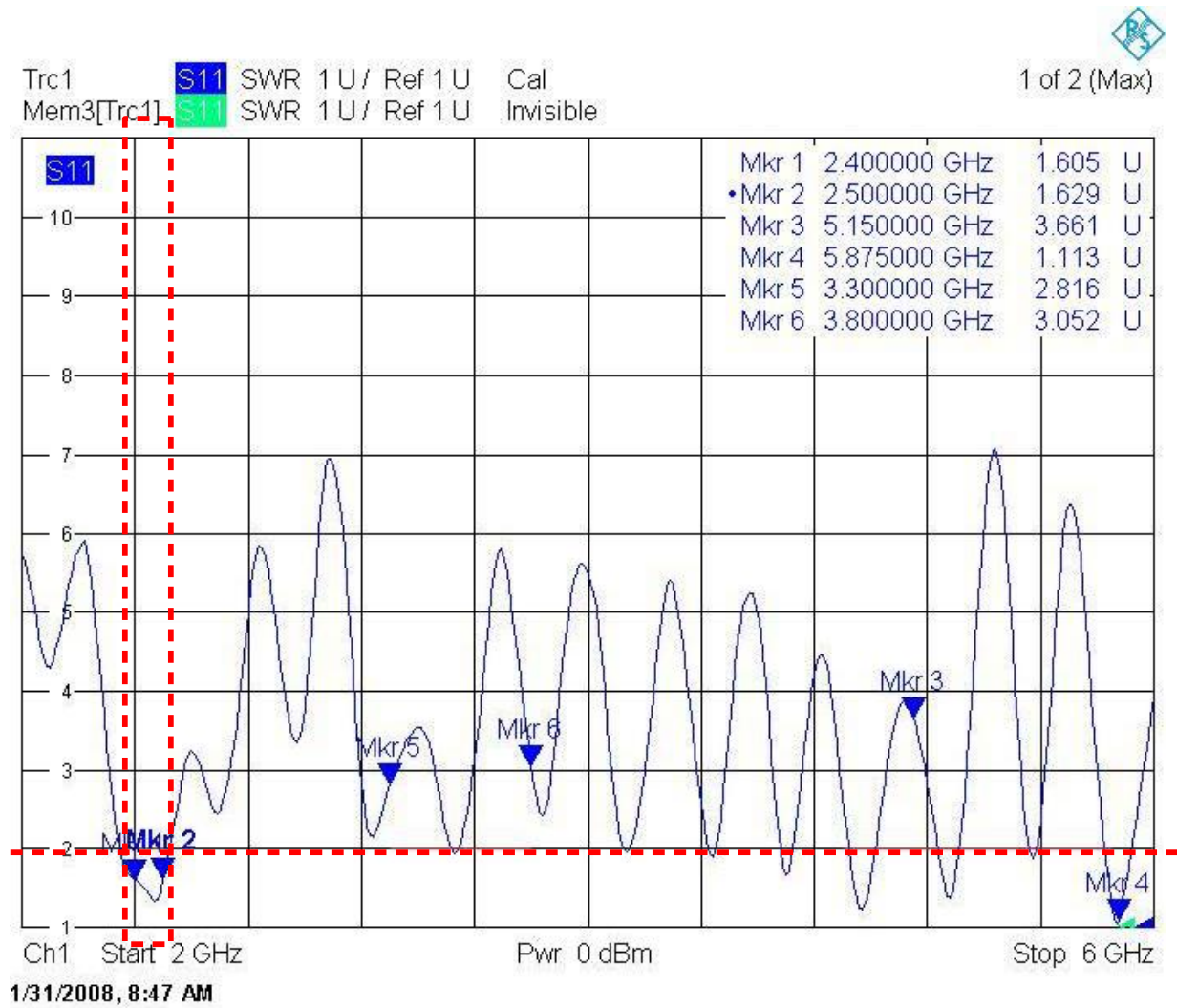
- 2.0 Dimension :**
 φ 13 mm * 200 mm

- 3.0 Peak Gain : 4.3 dBi**

- 4.0 Antenna measurement setup position**

- 5.0 Radiation Pattern**
 - 5.1 XY Plane
 - 5.2 XZ Plane
 - 5.3 ZY Plane

1.0 VSWR

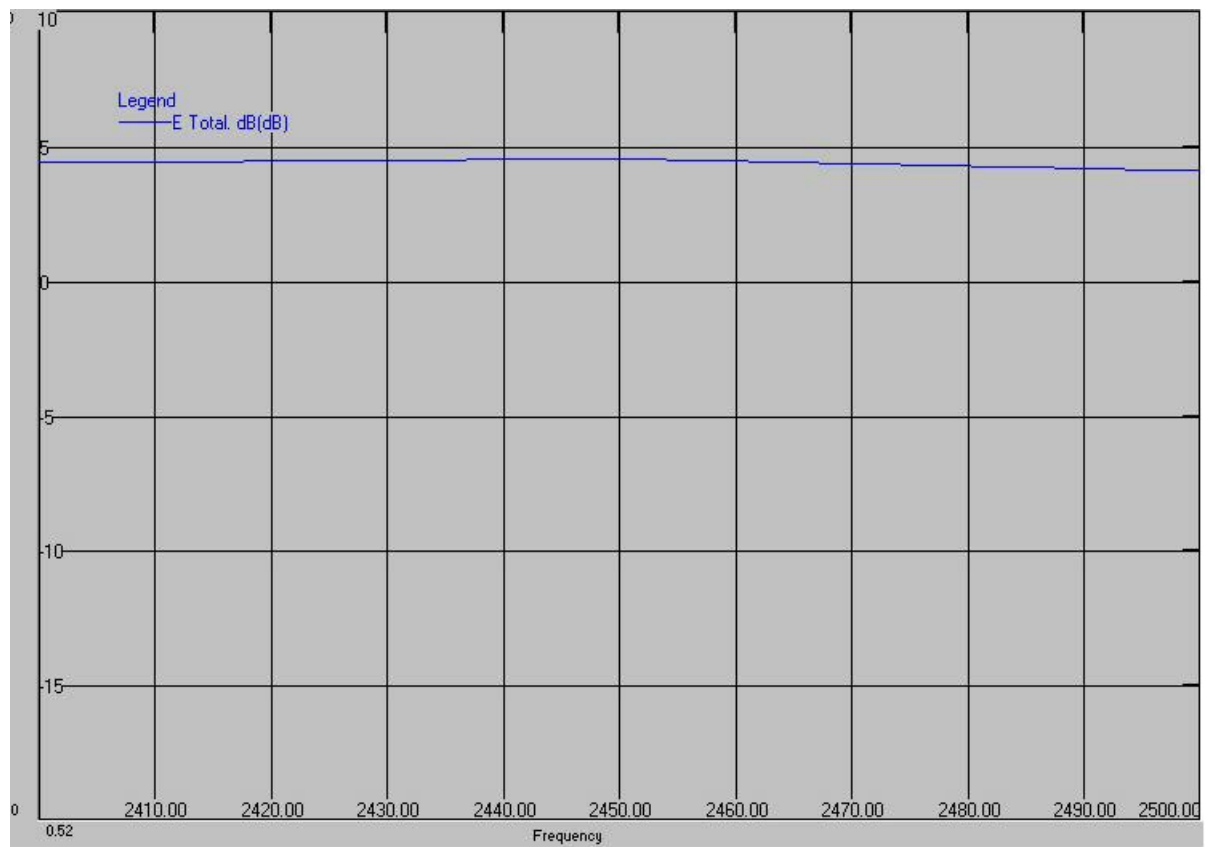


At 2.4 GHz: 1.605

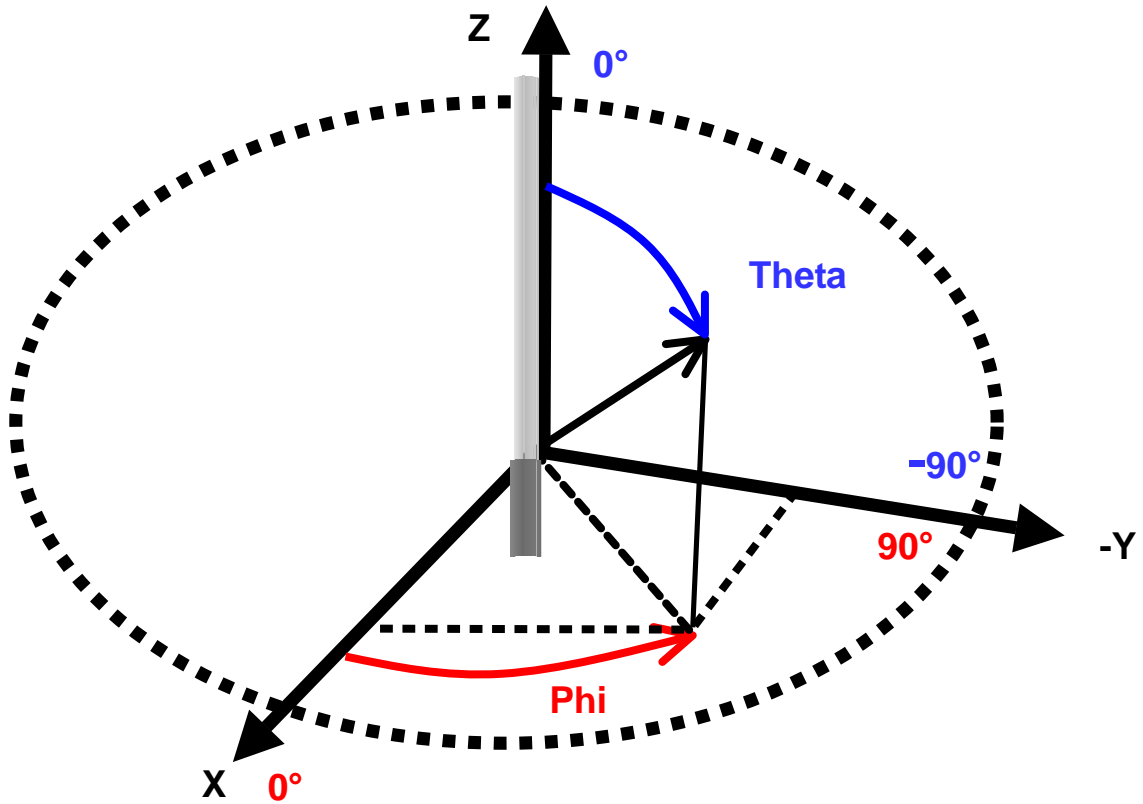
At 2.5 GHz: 1.629

2.0 Dimension

3.0 Peak Gain

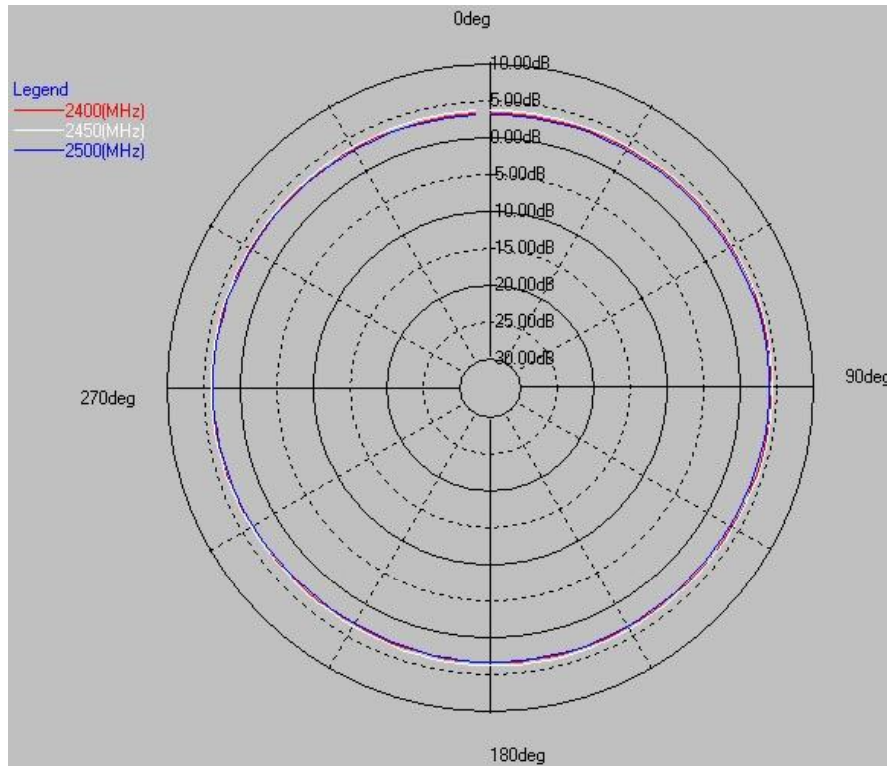


4.0 Co-ordinate System



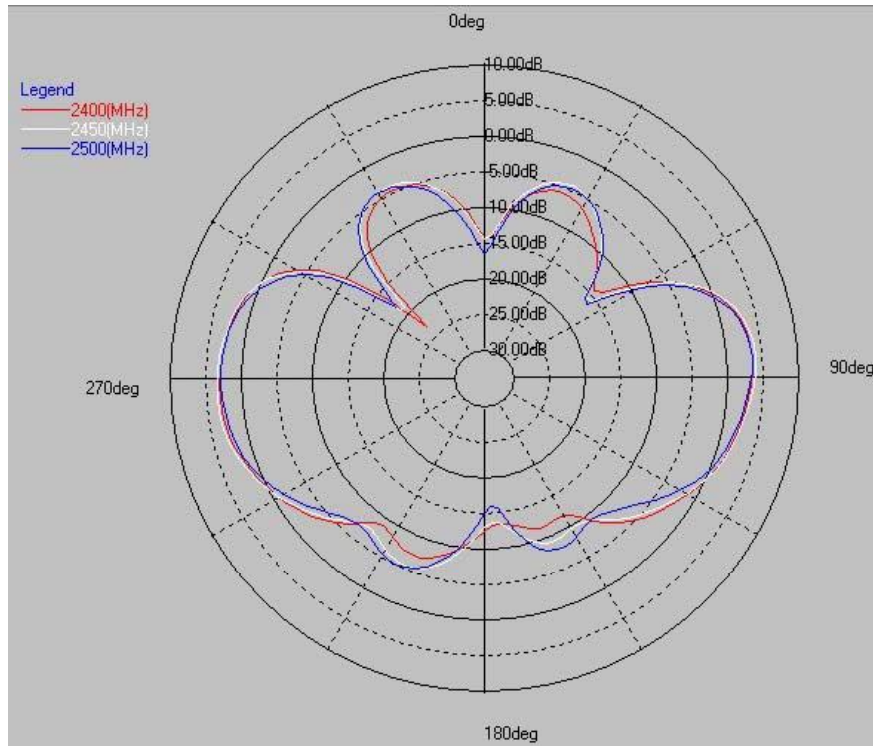
5.0 Radiation Pattern

5.1 XY Plane



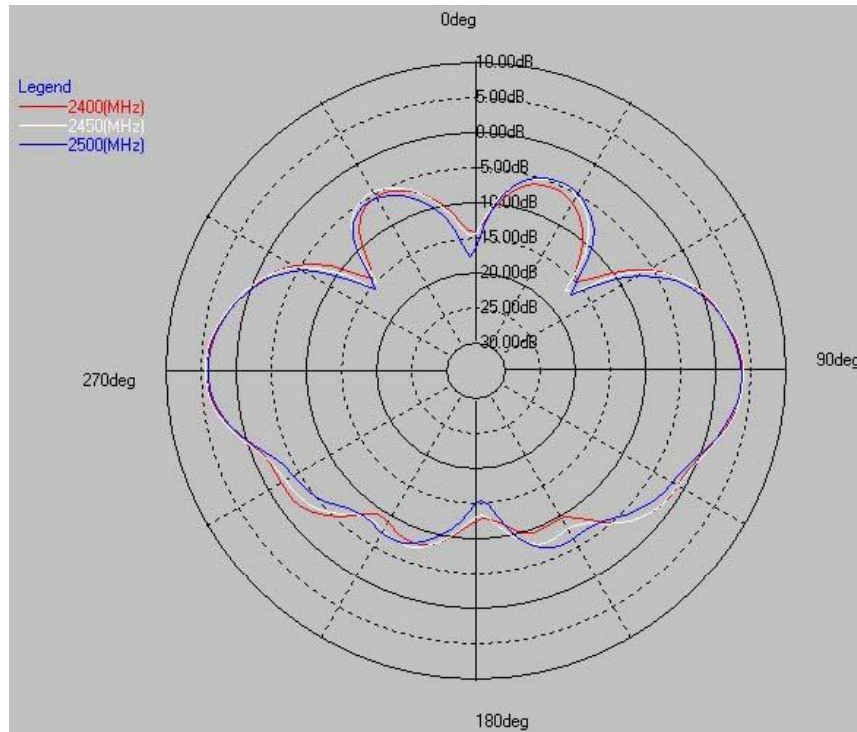
Layer	Max value	Position	Min value	Position	BeamWidth	Average
2400(MHz)	4.30 dB	90.00 deg	3.06 dB	348.00 deg	----	3.55 dB
2450(MHz)	4.46 dB	87.00 deg	3.39 dB	357.00 deg	----	3.80 dB
2500(MHz)	4.00 dB	87.00 deg	2.83 dB	6.00 deg	----	3.36 dB

5.2 XZ Plane



Layer	Max value	Position	Min value	Position	BeamWidth	Average
2400(MHz)	3.56 dB	85.71 deg	-23.28 dB	-48.57 deg	41.77 deg	-3.61 dB
2450(MHz)	4.07 dB	85.71 deg	-19.24 dB	-48.57 deg	39.23 deg	-3.24 dB
2500(MHz)	3.55 dB	85.71 deg	-18.17 dB	-51.43 deg	38.11 deg	-3.77 dB

5.3 ZY Plane



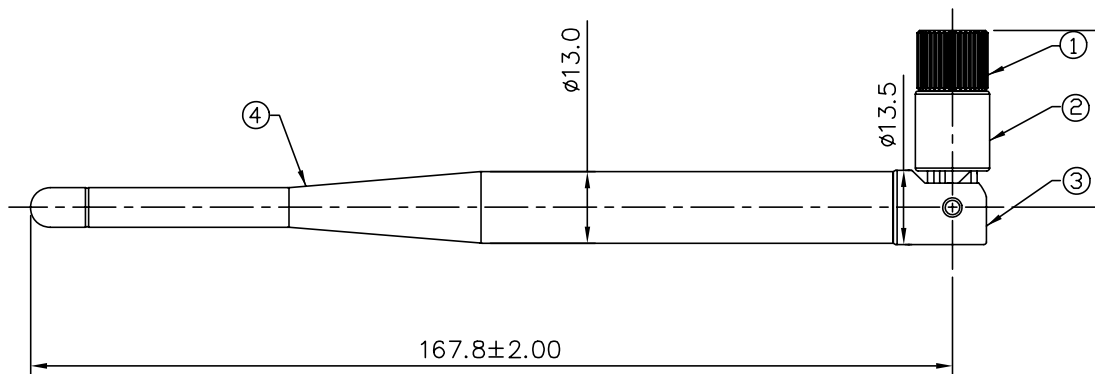
Layer	Max value	Position	Min value	Position	BeamWidth	Average
2400(MHz)	4.30 dB	-91.43 deg	-14.99 dB	48.57 deg	29.96 deg	-3.58 dB
2450(MHz)	4.45 dB	-91.43 deg	-17.11 dB	48.57 deg	30.85 deg	-3.38 dB
2500(MHz)	3.99 dB	-91.43 deg	-17.97 dB	-2.86 deg	31.25 deg	-3.86 dB

1

PART NUMBER BLOCK	
PART NUMBER	REV

ZONE	REV

A



B

		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:	
		INTEGRAL DIMENSIONS ±0.2	ANGULAR DIMENSIONS ±1°
		1 PLACE DECIMAL ±0.1	HOLES UNDER Ø5.00 ±0.05
		2 PLACE DECIMALS ±0.05	
		MATERIAL: NA	
		FINISH: NA	
		THIRD ANGLE PROJECTION	DRAWN
NEXT ASSY	USED ON		ENGR
APPLICATION			APVD

1

Texin 285

Polyester-based TPU grades / Shore hardness A 84 - 90

Aromatic polyester-based thermoplastic polyurethane grade with Shore A hardness of approximately 85 for injection molding, extrusion, and blow molding.

ISO Shortname

Property	Test Condition	Unit	Standard	Value
Rheological properties				
Mold shrinkage, flow/cross to flow	Value range based on general practical experience	in/in	ASTM D 955	0.008
Mechanical properties (23 °C/50 % r.h.)				
Flexural modulus	73 °F	lb/in ²	ASTM D 790	4000
Flexural modulus	-22 °F	lb/in ²	ASTM D 790	7200
Tensile strength		lb/in ²	ASTM D 412	5000
Ultimate elongation		%	ASTM D 412	500
Tensile stress at 50 % elongation		lb/in ²	ASTM D 412	725
Tensile stress at 100 % elongation		lb/in ²	ASTM D 412	775
Tensile stress at 300 % elongation		lb/in ²	ASTM D 412	1700
Compression set, as molded	22 h at 73 °F	%	ASTM D 395-B	18
Compression set, as molded	22 h at 158 °F	%	ASTM D 395-B	65
Compression set, post-cured	22 h at 73 °F; post-cured 16 h at 230 °F	%	ASTM D 395-B	12
Compression set, post-cured	22 h at 158 °F; post-cured 16 h at 230 °F	%	ASTM D 395-B	35
Compressive load	2% deflection	lb/in ²	ASTM D 575	50
Compressive load	5% deflection	lb/in ²	ASTM D 575	150
Compressive load	10% deflection	lb/in ²	ASTM D 575	325
Compressive load	15% deflection	lb/in ²	ASTM D 575	475
Compressive load	20% deflection	lb/in ²	ASTM D 575	625
Compressive load	25% deflection	lb/in ²	ASTM D 575	825
Compressive load	50% deflection	lb/in ²	ASTM D 575	2175
Tear strength, Die C		lb/in	ASTM D 624	500
Thermal properties				
Glass transition temperature	DMA=Dynamic Mechanical Analysis	°F	DMA	-44
Low-temperature brittle point		°F	ASTM D 746	< -90
Vicat softening temperature		°F	ASTM D 1525	196
UL94 Flame Class	Thickness tested: 3.0 mm	Class	UL 94	HB
Relative temperature index, mechanical with impact		°F	UL 748 B	252
Relative temperature index, electrical		°F	UL 748 B	252
Other properties (23 °C)				
Specific gravity		-	ASTM D 792	1.2
Shore hardness		A Scale	ASTM D 2240	85
Taber abrasion	H-18 wheel; 1,000-g; 1,000 cycles	mg Loss	ASTM D 3489	35
Bayshore resilience		%	ASTM D 2832	45

Texin 285

Disclaimer

Standard Disclaimer

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee, and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

Typical Properties

Property data is provided as general information only. Property values are approximate and are not part of the product specifications.

Flammability

Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.

Health and Safety

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Bayer products mentioned in this publication. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets (MSDS) and product labels. Consult your Bayer Polymers representative or contact the Bayer Product Safety and Regulatory Affairs Department in Pittsburgh, Pennsylvania. For materials that are not Bayer products, appropriate industrial hygiene and other safety precautions recommended by their manufacturer(s) must be followed.

Regulatory Compliance

Some of the end uses of the products described in this brochure must comply with applicable regulations, such as the FDA, NSF, USDA and CPSC. If you have any questions on the regulatory status of any Bayer engineering thermoplastic, consult your Bayer Polymers representative or contact the Bayer Regulatory Affairs Manager in Pittsburgh, Pennsylvania.

Publisher: Business Development Plastics

Bayer MaterialScience AG

D-51368 Leverkusen

www.bayermaterialscience.com



QMF22 Component - Plastics Friday, October 31, 2003 E336640

BAYER POLYMERS LLC
 PLASTICS DIV PLASTIC PRODUCTS BLDG 8 100 BAYER RD PITTSBURGH PA 15205

Material Designation: **Texin 285**

Product Description: Polyurethane (PUR), flexible elastomer, designated "Texin" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
NC, TL	1.5	HB	-	-	50	50	50	-	-
	3.0	V-2	-	-	50	50	50	-	-

CTI: - HVTR: - D495: - IEC Bill Pressure (°C): -

Dielectric Strength (kV/mm): - Volume Resistivity (10¹⁰ohm-cm): - Dime l sional Stability(%): -
 ISO Tensile Strength (MPa): - ISO Flexural Strength (MPa): - ISO Post Deflection (°C): -
 ISO Tensile Impact (kJ/m²): - ISO Izod Impact (kJ/m²): - ISO Charpy Impact (kJ/m²): -

Report Date: 6/23/1995 Underwriters Laboratories Inc®

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

測試報告

台輝股份有限公司
 AXKO CO., LTD.
 台北市中山區建國北路三段143號3樓
 3F, NO. 143, SEC. 3, CHIHEN KUIO N. RD., TAIPEI, TAIWAN

號碼 : CK/2007/4154
 日期 : 2007/06/23
 頁數 : 1 of 5



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下：

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

樣品名稱(Sample Description) : IPU
 樣品型號(Style/Item No.) : LESMOPAN 150, 192, 3385A, 340, 3485A, 550, 305, 539, 350, 372, 385E, 385S, 392, 445, 463, 460, 481, 487, 557A, 585, 588E, 785E, 785S, 790, 790U, 9385, 950U, DP130E, EP1485A, DP1490A, EP1592A, DP2085A, DP2590A, DP2785A, EP2792A, DP3059D, EP3070A, DP3085A, DP3380A, DP3491A, EP3600EU, EP3685AU, DP3690AU, DP3970D, DP3980A, EP6045D, DP6055A, EP6385A, DP6600SGN, DP8785ASC45, EP8792AS043, DP8795AS043, EP8798ASC45, DP9090AU, EP9370A, DP9370AU, DP9380A, DP9392A, DP9392AU, EP9095AU, EP9370A, DP9370AU, DP9385A, DP9392A, LP9392AU, LP9395A, LP9395AU, LP9585A, LP9585U, LP9585EU, LP9585LU, LP9585LU, LP9585D, LP9585U, KA8377, KA8410, KA8417, KA8520, KUZ-8715, KUZ-8785LIT032, KUZ-8792A, KU2-8795A, KUZ-8795A, KU2 88586, WDP89043D, WDP88783A, WDP85085A, WDP89051D, WDP89056D, WDP89085A, KU2 8030, DP1036A, EP2781A, DP3695AU, KA8373, 8030SGN, 8068SGN, 8035, 8055, 8075 TEXIN 2x5, 215R, 250, 255, 260, 270, 285, 390, 4210, 4315, 8450, 950, 950U, 785, 8700, 985, 985U, 990, 990S, EP7 1079, EP7 1080, EP7 1097, DP7 3007, 185, DP7 1158, EP7 3008, EP7 3018, EP7 3003, DP7 3017, DP7 1077, EP7 1783, EP7 1788, EP7 1793, DP7 1772

收件日期(Sample Receiving Date) : 2007/06/23
 測試期間(Testing Period) : 2007/06/23 TO 2007/06/30

=====
 測試結果 : 請見下一頁。

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

測試報告

台輝股份有限公司
 AXHO CO., LTD.
 台北市中山區建國北路三段143號3樓
 3F, NO. 143, SEC. 3, CHIHEN KUO N. RD., CATPRI, TAIWAN

號碼 : CK/2017/4154
 日期 : 2017/04/20
 頁數 : 2 of 3




測試結果

測試部位 NO.1 : 透明塑膠顆粒 / TRANSPARENT PLASTIC PELLETS

測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				NO.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321, Ed. 1 11/54/CEV方法, 用感應耦合電漿 原子發射光譜儀 (ICP-AES) 檢測 鎘含量。 / With reference to IEC 62321, Ed.1 11/54/CEV. Determination of Cadmium by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321, Ed. 1 11/54/CEV方法, 用感應耦合電漿 原子發射光譜儀 (ICP-AES) 檢測 鉛含量。 / With reference to IEC 62321, Ed.1 11/54/CEV. Determination of Lead by ICP AES.	2	n.d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321, Ed. 1 11/54/CEV方法, 用感應耦合電漿 原子發射光譜儀 (ICP-AES) 檢測 汞含量。 / With reference to IEC 62321, Ed.1 11/54/CEV. Determination of Mercury by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	針對非金屬材質之樣品, 參考IEC 62321, Ed. 1 11/54/CEV 方法檢 測, 用UV-VIS檢測六價鉻含量。 / With reference to IEC 62321, Ed.1 11/54/CEV. Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.	2	n.d.

測試報告

台輝股份有限公司
 AZHO CO., LTD.
 台北市中山區建國北路二段143號3樓
 3F, NO. 143, SEC. 2, CHUAN KUO N. RD., TAIPEI, TAIWAN

號碼 : CB/2007/4064
 日期 : 2007/03/30
 頁數 : 3 of 5


測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				NO.1
鹵素 / HALOGEN		參考prEN14582方法B, 以離子層析儀分析氯, 氟, 溴, 碘含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Br, Cl, F, I content.		
鹵素 (氯) / Halogen Chlorine (Cl) (CAS NO.: 007782-63-5)	mg/kg	參考prEN14582方法B, 以離子層析儀分析氯含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Chlorine content.	50	n.d.
鹵素 (氟) / Halogen-Fluoride (F) (CAS NO.: 007782-41-4)	mg/kg	參考prEN14582方法B, 以離子層析儀分析氟含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Fluoride content.	50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS NO.: 007726-95-6)	mg/kg	參考prEN14582方法B, 以離子層析儀分析溴含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Bromine content.	50	n.d.
鹵素 (碘) / Halogen Iodine (I) (CAS NO.: 007553-53-2)	mg/kg	參考prEN14582方法B, 以離子層析儀分析碘含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Iodine content.	50	n.d.

測試報告

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 AZHO CO., LTD.
 台北市中山區建國北路二段143號3樓
 3F, NO. 143, SEC. 2, CHIEN KUO N. RD., TAIPEI, TAIWAN

號碼 : CB/2007/4364
 日期 : 2007/03/30
 頁數 : 1 of 5



測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)			
				NO.1			
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IRC 62321, Rd.1 1.1/201/CEV方法, 以氣相層析儀/ 質譜儀檢測多溴聯苯和多溴聯苯醚 含量。 / With reference to IRC 62321, Rd.1 1.1/51/CEV, Determination of PBB and PBDE by GC/MS.		n.d.			
一溴聯苯 / Monobromobiphenyl				b	n.d.		
二溴聯苯 / Dibromobiphenyl				G	n.d.		
三溴聯苯 / Tribromobiphenyl				b	n.d.		
四溴聯苯 / Tetrabromobiphenyl				b	n.d.		
五溴聯苯 / Pentabromobiphenyl				G	n.d.		
六溴聯苯 / Hexabromobiphenyl				S	n.d.		
七溴聯苯 / Heptabromobiphenyl				G	n.d.		
八溴聯苯 / Octabromobiphenyl				G	n.d.		
九溴聯苯 / Nonabromobiphenyl				b	n.d.		
十溴聯苯 / Decabromobiphenyl				S	n.d.		
多溴聯苯醚總和 (一至九溴) / Sum of PBDEs (Mono to Nona) (Note 4)							n.d.
一溴聯苯醚 / Monobromobiphenyl ether				b	n.d.		
二溴聯苯醚 / Dibromobiphenyl ether				G	n.d.		
三溴聯苯醚 / Tribromobiphenyl ether				S	n.d.		
四溴聯苯醚 / Tetrabromobiphenyl ether				G	n.d.		
五溴聯苯醚 / Pentabromobiphenyl ether				G	n.d.		
六溴聯苯醚 / Hexabromobiphenyl ether				S	n.d.		
七溴聯苯醚 / Heptabromobiphenyl ether				S	n.d.		
八溴聯苯醚 / Octabromobiphenyl ether				G	n.d.		
九溴聯苯醚 / Nonabromobiphenyl ether	S	n.d.					
十溴聯苯醚 / Decabromobiphenyl ether	G	n.d.					
多溴聯苯醚總和 (一至十溴) / Sum of PBDEs (Mono to Deca)				n.d.			

Note : 1. mg/kg = ppm

2. n.d. = Not Detected / 未檢出

3. MEL = Method Detection Limit / 方法偵測極限值

4. According to 2005/717/EC DecaBDE is exempt.

根據2005年10月13日歐盟會議公佈2005/717/EC, 修訂2002/95/EC內容, 通過解除
 高分子材質中十溴聯苯醚之使用限制。

5. "-" = Not Regulated / 無規格值

6. " - " = Not Conducted / 未測項目

測試報告

台塑股份有限公司
AXKO CO., LTD.
台北市中山區建國北路三段143號3樓
3F, NO. 143, SEC. 3, CHIEN KUO N. RD., TAIPEI, TAIWAN

號碼 : CE/2007/45454
日期 : 2007/04/30
頁數 : 5 of 5



== 報告結尾 ==



CHI MEI CORPORATION

59-1 SAN CHIA, JEN TE, TAINAN COUNTY, TAIWAN R.O.C. TEL: 886-6-266-5000, FAX: 886-6-266-5555-7

泛用級 ABS, POLYLAC[®] PA-757

VIW

材料特性

特性(Properties)	測試方法(Test Method)	測試條件(Test Condition)	單位(Unit)	PA-757
引張強度 Tensile Strength	ASTM D638	1/8", 6 mm/min	Kg/cm ² (lb/in ²)	480(6800)
延伸率 Tensile Elongation	ASTM D638	1/8", 6 mm/min	%	20
彎曲強度 Flexural Strength	ASTM D790	1/4", 2.8 mm/min	Kg/cm ² (lb/in ²)	820(11660)
彎曲彈性率 Flexural Modulus	ASTM D790	1/4", 2.8 mm/min	Kg/cm ² (lb/in ²)	27000(380000)
IZOD 衝擊強度 Izod Impact Strength	ASTM D256(Notched)	1/4", 23°C 1/8", 23°C	Kg-cm/cm(ft-lb/in) Kg-cm/cm(ft-lb/in)	18(3.3) 20(3.7)
流動係數 Melt Flow Index	ASTM D1238	200°C, 5Kg	g/10min	1.8
硬度 Hardness	ASTM D785	1/2"	R Scale	116
比重 Specific Gravity	ASTM D792	23°C	-	1.05
軟化點 Vicat Softening Temp	ASTM D1525	1/8", 50°C/hr	°C (°F)	105(221)
熱變形溫度 H.D.T Annealed(85°C, 8hr) Unannealed	ASTM D648	1/4", 120°C/hr	°C (°F)	99(210) 88(190)
燃燒率 Flammability	UL 94	-	-	1/16"HB

以上數據僅代表一般通用數據，不代表每一產品的規格值

若有任何疑問請洽產品推廣課 06-2665000, 06-2663000



奇美實業股份有限公司

台灣省台南縣仁德鄉三甲村59-1號。電話：886-6-266-5000，傳真：886-6-266-5555~7

1/2(A-GHE)

物質安全資料表

V1W

1. 物品及廠商資料

產品名稱	Polylac[®]	PA-707	PA-757	PA-757N	PA-717C	PA-727	PA-747	PA-709
製造商	奇美實業股份有限公司							
地址	台灣省台南縣仁德鄉三甲村 59-1 號							
電話	886-6-2663000 Ext.1361 (產品推廣課)							
緊急電話	886-6-2663000 Ext.1361 (產品推廣課)							
傳真電話	886-6-2667981							

2. 成品辨識資料

單一產品或混合物	單一產品
化學名稱	Acrylonitrile-Butadiene-Styrene Copolymer
含量	>98% (添加劑≤2%)
化學式	(C ₃ H ₃ N, C ₄ H ₆ , C ₈ H ₈) _x
CAS No.	9003-56-9
危害性不純物	無

3. 危害性分類

健康危害效應	無
環境影響	無
物理性及化學性危害	無
特殊危害	無

4. 急救措施

吸入	若吸入熔融樹脂逸出之氣體，將患者移至通風處，立即送醫。
皮膚接觸	若接觸到塑膠粒或塑膠粉末，以清水沖洗。 若接觸到熔膠，以大量(肥皂)水沖洗患部及衣物，立即送醫。
眼睛接觸	若接觸到塑膠粒或塑膠粉末，以大量清水至少沖洗 15 分鐘。 若有不適，立即送醫。 若接觸到高溫熔融樹脂逸出之氣體，以大量清水至少沖洗 15 分鐘。 若有不適，立即送醫。
吞食	催吐，以清水漱口，若有不適，立即送醫。

5. 消防措施

適用滅火劑	水、泡沫、乾粉
滅火時可能遭遇之特殊危害	無
特殊滅火程序	移除可燃物
消防人員之特殊防護設備	使用供氧式呼吸防護具

6. 洩漏處理方法

個人應注意事項	若塑膠粒或塑膠粉末殘留於地面上，可能會導致人員滑倒。
環境注意事項	為防止鳥類或魚類由排水系統中攝食，須徹底回收
清理方法	回收或廢棄

7. 安全處置與儲存方法

處置	操作處所須嚴禁煙火，做好整理整頓以避免粉塵累積。為防止塵爆，空氣輸送管路、袋濾器及儲槽須加裝靜電消除裝置，並確實接地。袋濾器之濾材採導電性材質。
儲存	存放於陰涼處所，避免直射陽光、雨淋及急遽之溫差。儲存處嚴禁煙火



奇美實業股份有限公司

台灣省台南縣仁德鄉三甲村59-1號. 電話: 886-6-266-5000, 傳真: 886-6-266-5555~7

2/2(A-GHE)

8. 暴露預防措施

容許濃度(TLV)	未定
通風設備	排除粉塵、煙及氣體時使用
個人防護設備	呼吸防護 清洗成型機時使用防毒面具。 手部防護 接觸熔膠時使用皮手套。 眼睛防護 平時使用安全眼鏡，清洗成型機時使用護目鏡

9. 物理及化學性質

物質狀態	米白色膠粒
形狀	粒狀
顏色	米白色
氣味	無
閃火點	404 °C
自燃溫度	466 °C
爆炸界限	45 g/m ³
最小著火能量	3.6 mJ
最大爆炸壓力	7 × 10 ⁵ Pa
最大壓力上升速度	3.2 × 10 ⁷ Pa/S
比重	1.03-1.10
溶解度	無

10. 安定性及反應性

安定性	依一般操作及儲存程序時，安定性佳。
危害性分解物	CO, HCN, AN, SM and NO
燃燒能量	3.53 × 10 ⁷ J/kg (8424 Kcal/kg)

11. 毒性資料

刺激性	分解後之塑膠所產生的煙及蒸氣會刺激眼睛。
-----	----------------------

12. 生態資料

為防止被海洋生物或鳥類攝食，嚴禁丟棄至海洋或水域。

13. 廢棄物處理

適當之焚化爐燃燒或掩埋法。不適當之焚化爐可能會產生有毒氣體如 CO, HCN, AN and SM.

14. 運送資料

未分類

15. 法規資料

無

16. 其他資料

無

CHI MEI CORPORATION

59-1 SAN CHIA JEN TE TAINAN HSIEN TAIWAN

Material Designation: PA-757 (+)

Product Description: Acrylonitrile Butadiene Styrene (ABS), designated "Polylac" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
ALL	1.5	HB	4	0	85	80	85	-	-
	3.0	HB	3	0	85	80	85	-	-
CTI: 0	IEC CTI: -	HVTR: 1			D495: 1			IEC Ball Pressure (°C): -	
Dielectric Strength (kV/mm): -					Volume Resistivity (10 ¹² ohm-cm): -			Dimensional Stability(%): -	
ISO Tensile Strength (MPa): -					ISO Flexural Strength (MPa): -			ISO Heat Deflection (°C): -	
ISO Tensile Impact (kJ/m ²): -					ISO Izod Impact (kJ/m ²): -			ISO Charpy Impact (kJ/m ²): -	

(+) Optional prefix or suffix may be used to denote 0-0.5% acid scavengers.

Report Date: 6/23/1983

Underwriters Laboratories Inc®

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULI.



CHI MEI CORPORATION

59-1 SAN CHIA, JEN TE, TAINAN COUNTY, TAIWAN R.O.C. TEL: 886-6-266-5000, FAX: 886-6-266-5617

Data issued: May 25, 2005

We hereby certify that the follow Polylac ABS resin (list as follow) produced by Chi Mei Corporation

GP-Grade	PA-707, PA-757, PA-717C, PA-727, PA-747, PA-709,
HF-Grade	PA-756, PA-756S, PA-756H, PA-756B, PA-716, PA-746, PA-746H, PA-737
Extrusion Grade	PA-747F, PA-747R, PA-747S, PA-709S
HH-Grade	PA-777B, PA-777D, PA-777E
Transparent Grade	PA-758

conforms to the requirement that no chemicals as following are added.

1. PBBEs (Poly Bromo Bisphenyl Ethers)
2. PBBs (Poly Bromo Bisphenyls)
3. Ozone Depleting Chemicals(CFC's&HCFC'S)
4. Chlorinated Paraffin (C10-C13)
5. Polyvinyl Chloride (PVC)
6. Mercury(Hg) and its compounds,
7. Lead(Pb) and its compounds,
8. Cadmium(Cd) and its compounds,
9. Chromium(Cr) and its compounds,
10. Arsenic(As) and its compounds,
11. Antimony(Sb) and its compounds,
12. Selenium(Se) and its compounds,
13. Barium(Ba) and its compounds,
14. Chromium(Cr) VI and its compounds
15. Organic tin compounds
16. Polychlorinated Biphenyls(PCB's) and Terphenyls(PCT's)
17. Poly naphthalenes
18. Azo compounds
19. Polychlorinated biphenyl
20. Polychlorinated naphthalene
21. Asbestos
22. Phthalates

With regard to composition of above grade, they can comply with the Directives of RoHS (2002/95/EC), 2003/11/EC , TCO'99, Blue Angel and SONY (SS-00259)

Sincerely Yours,

Eric Chou

Manager

Department of Product Strategy & Service

This statement is based on our current level of knowledge and covers the above resins as supplied by CHI MEI CORPORATION at the date of issue. Since conditions of use are outside CHI MEI CORPORATION's control, CHI MEI CORPORATION makes no warranties, express or implied, and assumes no liability in connection with any use of this information.



Test Report

No. :KA/2007/C2081

Date: 2008/01/02 Page: 1 of 5



CHI MEI CORPORATION.
59-1 SAN CHIA, JEN TE TAINAN COUNTY, TAIWAN.

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

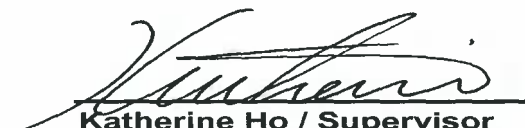
Sample Description	:	ACRYLONYTRILE-BUTADIENE-STYRENE COPOLYMER
Style/Item No.	:	POLYLAC® PA-757
Color	:	NATURE
Sample Receiving Date	:	2007/12/20
Testing Period	:	2007/12/20 TO 2008/1/2

=====
Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

Test Method :

- (1) With reference to US EPA 3052 for Cadmium Content. Analysis was performed by ICP-AES.
- (2) With reference to US EPA Method 3052 for Lead Content. Analysis was performed by ICP-AES.
- (3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.
- (4) With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.
- (5) With reference to US EPA 3540C for PBBs/PBDEs Content. Analysis was performed by GC/MS.

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


Katherine Ho / Supervisor
Signed for and on behalf of
SGS Taiwan Limited

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TW5950925

Test Report

No. :KA/2007/C2081

Date: 2008/01/02 Page: 2 of 5



CHI MEI CORPORATION.
59-1 SAN CHIA JEN TE TAINAN COUNTY TAIWAN.

Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result	MDL
		No.1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	2
Sum of PBBs		n.d.	-
Monobromobiphenyl		n.d.	5
Dibromobiphenyl		n.d.	5
Tribromobiphenyl		n.d.	5
Tetrabromobiphenyl		n.d.	5
Pentabromobiphenyl		n.d.	5
Hexabromobiphenyl		n.d.	5
Heptabromobiphenyl		n.d.	5
Octabromobiphenyl		n.d.	5
Nonabromobiphenyl		n.d.	5
Decabromobiphenyl		n.d.	5
Sum of PBDEs (Mono to Nona)(Note 4)	(5)	n.d.	-
Monobromobiphenyl ether		n.d.	5
Dibromobiphenyl ether		n.d.	5
Tribromobiphenyl ether		n.d.	5
Tetrabromobiphenyl ether		n.d.	5
Pentabromobiphenyl ether		n.d.	5
Hexabromobiphenyl ether		n.d.	5
Heptabromobiphenyl ether		n.d.	5
Octabromobiphenyl ether		n.d.	5
Nonabromobiphenyl ether		n.d.	5
Decabromobiphenyl ether		n.d.	5
Sum of PBDEs (Mono to Deca)		n.d.	-

TEST PART DESCRIPTION:

NO.1 : NATURE PLASTIC PELLETS

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TW5950924



Test Report

No. :KA/2007/C2081

Date: 2008/01/02 Page: 3 of 5



CHI MEI CORPORATION.
59-1 SAN CHIA,JEN TE TAINAN COUNTY,TAIWAN.

- Note :
1. mg/kg = ppm
 2. n.d. = Not Detected
 3. MDL = Method Detection Limit
 4. According to 2005/717/EC DecaBDE is exempt.
 5. " - " = Not Regulated

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TW5950923

Test Report

No. :KA/2007/C2081

Date: 2008/01/02 Page: 4 of 5

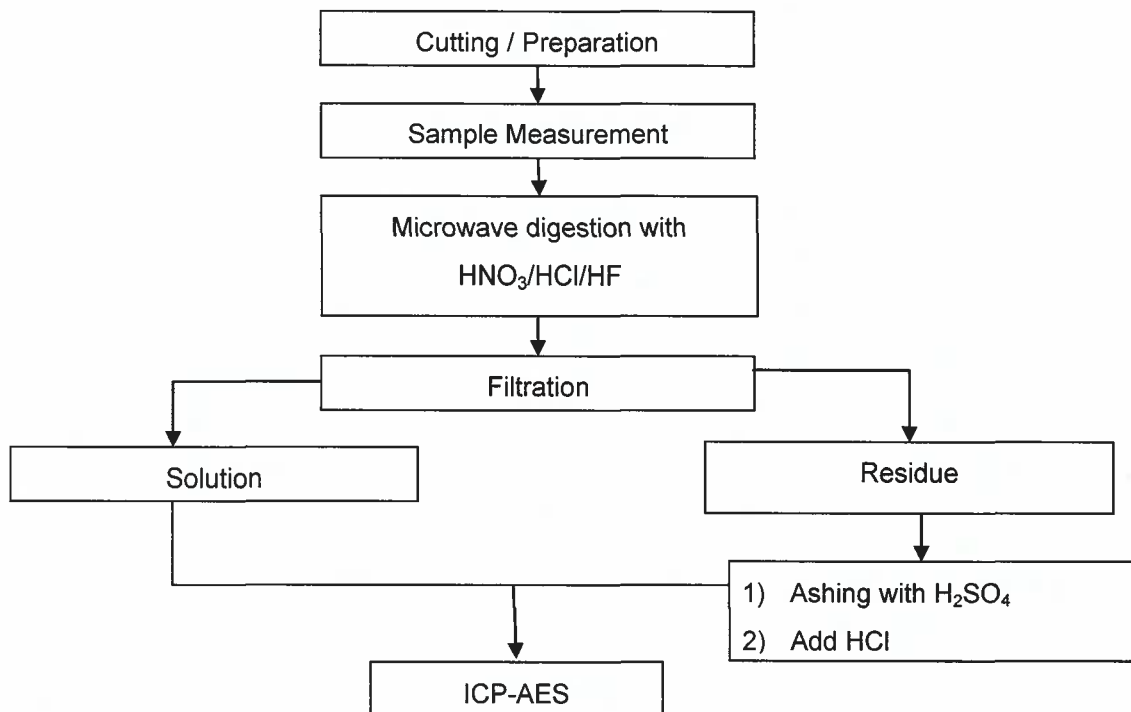


CHI MEI CORPORATION.
59-1 SAN CHIA,JEN TE TAINAN COUNTY,TAIWAN.

Per requirements of SONY QAR-05-002:

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) Name of the person who made measurement: Hungming Li
- 3) Name of the person in charge of measurement: George Huang

Flow Chart of Digestion for Plastic –EPA3052 for Pb · Cd (residue left)



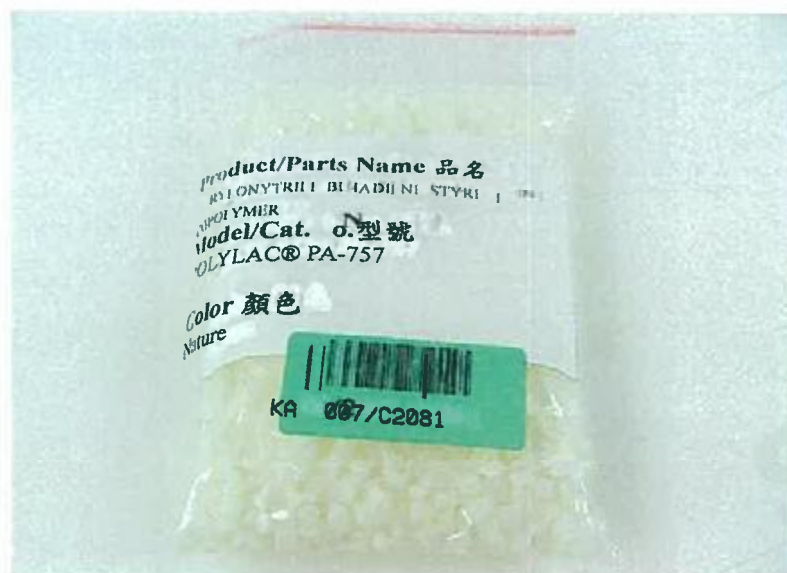
Test Report

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Date: 2008/01/02 Page: 5 of 5



CHI MEI CORPORATION.
59-1 SAN CHIA,JEN TE TAINAN COUNTY,TAIWAN.



** End of Report **

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TW5950921

元伴金屬工業股份有限公司 材質證明-黃銅

YUANG-HSIAN METAL INDUSTRIAL CORP.

彰化市 5 0 0 4 2 彰水路 1 7 5 號

175,CHANG SHOEI ROAD,CHANG HUA TAIWAN R.O.C

TEL:(04)7524626-8

FAX:886-4-7611717

試驗報告表

TEST REPORT

供應商名稱 vendor name	茂豐精密工業股份有限公司 Mawfong Precision Industrial Co., Ltd.			日期: DATE	95年05月08日 2006.05.08	
試材名稱 Material	銅合金 Copper Alloys	合金編號 Alloys No.	C3604BD	試材編號 Material No.		
化學試驗 (Chemical Testing)						
試驗方法 Experimental Coudition	X一線光譜分析法(X one line spectra analysis method)					
使用儀器名稱 Instrumentation name	X光電腦分析儀(VACUUM X RAY SPECTROGRAPH)					
元素名稱 Element name	標準含量(%) Standard contents	試片含量(%) Sample contents	元素名稱 Element name	標準含量(%) Standard contents	試片含量(%) Sample contents	
銅 (Cu)	57.0-61.0	58.8±0.1	鐵 (Fe)	<0.5	0.3±0.1	
鋅 (Zn)	REM	REM	矽 (Si)	_____	_____	
錫 (Sn)	Fe+Sn<1.2	0.3±0.1	錳 (Mn)	_____	_____	
鉛 (Pb)	1.8-3.7	3.3±0.1	銻 (Sb)	_____	_____	
鎳 (Ni)	_____	_____	鋁 (Al)	_____	_____	
磷 (P)	_____	_____	其他 (Others)	_____	_____	
備註 (Remarks)	DLA.5.5mm					
分析員 (Analyze a member)	蔡聰銘		主管 (Supervisor)	張國桐		

033282515

SGS**Test Report**

No : CE/2006/B4660B Date : 2006/12/01 Page: 1 of 3

KUON CHEN HARDWARE CO., LTD.
24, 1ST TING-HU, KUEI-SHAN HSIANG, TAO YUAN
HSIEN, TAIWAN, R. O. C.

Report on the submitted sample said to be Cu.

Style/Item No : C3604
Sample Receiving Date : 2006/11/20
Testing Period : 2006/11/20 TO 2006/11/27 & 2006/11/29 TO 2006/12/1

=====

Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

Test Method : (1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES.
(2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES.
(3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.
(4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry.

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


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



Test Report

No : CE/2006/B4660B Date : 2006/12/01 Page: 2 of 3

KUON CHEN HARDWARE CO., LTD.
24, 1ST TING-HU, KUEI-SHAN HSIANG, TAO YUAN
HSIEN, TAIWAN, R. O. C.

TEST REPORT NO. CE/2006/B4660B

Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result	MDL
		No.1	
Cadmium (Cd)	(1)	44.1	2
Lead (Pb)	(2)	29871.1	2
Mercury (Hg)	(3)	n.d.	2
Hexavalent Chromium (CrVI)	(4)	n.d.	2

Test Part Description:

NO.1 : GOLDEN COLORED METAL

- Note :
1. mg/kg = ppm
 2. n.d. = Not Detected
 3. MDL = Method Detection Limit
 4. The report number of CE/2006/B4660 is invalid.

033282515

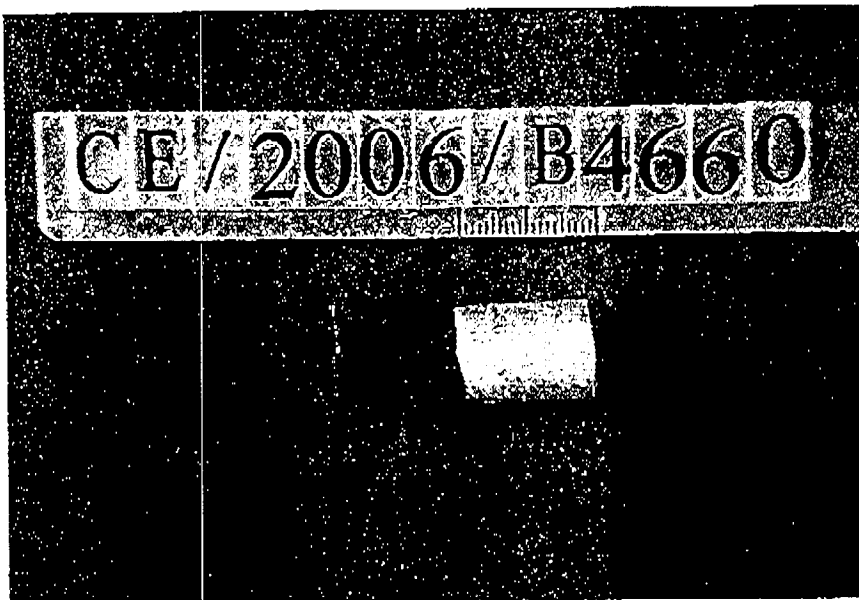


Test Report

No : CE/2006/B4660B Date : 2006/12/01 Page: 3 of 3

KUON CHEN HARDWARE CO., LTD.
24, 1ST TING-HU, KUEI-SHAN HSIANG, TAO YUAN
HSIEN, TAIWAN, R. O. C.

此報告係根據客戶提供之樣品所製成，如有任何疑義，請洽本公司。



** End of Report **

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鉍銅

BRUSHWELLMAN

ENGINEERED MATERIALS

Repeat printout

Page 1 of 2

Shoemakersville Road, Shoemakersville, PA 19555
Phone: 610-562-2211 ; Fax: 610-562-6810

Material Certificate				
Date:	06/08/2006			
Purchase order item/date	882922 / 05/09/1960			
Delivery item/date shipped	80308052 900001 / 06/08/2006			
Order item/date	183350 000010 / 05/09/2006			
Customer nbr	Customer part nbr			
11817				
Customer spec				
Rev	Type	Comp	Class	Grade

32
112

EW 0298 - R

Brush Wellman Singapore (S) Pte.
Ltd.
110 Paya Lebar Road, #02-01
409009 SINGAPORE
SINGAPORE

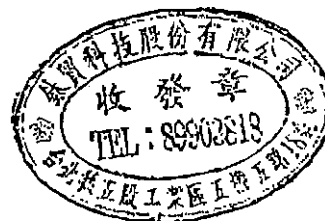
Our Material: K554480400 ROD CD M25 H .08268 X 4>.1
"Brush Wellman Inc. declares that this product is in conformance with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)."

Brush Wellman testing for chemical composition (by Optical Emission Spectrometry), is conducted at our Elmore, OH Laboratories. Testing of mechanical or physical properties is conducted at Laboratories which are accredited by American Association for Laboratory Accreditation.

This material was inspected and tested for conformity as required in accordance with the noted part specification, and revision number. The quantitative test data obtained from these tests are available for review by the buyer.

Batch 0000509849 / Quantity 85.275 KG

Characteristic	Unit	Value	Specification Limits	
			Lower	Upper
CDA (UNS) Alloy	-	C17300		
ASTM Temper	-	TD04		
Brush Spec Nbr.	-	BWJ-RW5.00-2		
<u>Dimensional Attributes</u>				
Diameter	-	0.08260		
Diameter Plus	-	0.00000		
Diameter Minus	-	0.00039		
Length	-	98.42525		
<u>Mechanical/Physical Properties</u>				
Grain Size	mm	0.017 0.026		0.050
Tensile	kg/mm2	77.0	63.0	88.0
Yield @ 0.2% Offset	kg/mm2	62.0	52.0	74.0
Elongation (4D or 2")	%	13.0	10.0	
Hardness Scale	-	HV		
Hardness Value		251.0	200.0	270.0
The material supplied with this certification has not been heat treated. The following properties were achieved in Brush Wellman's laboratory. They represent what you may expect after heat treating the material, using the time and temperatures shown.				
R1 Temper	-	HT		
R1 Heat Treat Time	hrs	2.00	2.00	2.00
R1 Heat Treat Temp	°C	316	316	316



L2
"

鈹銅

BRUSHWELLMAN
ENGINEERED MATERIALS

EW0298-R

Brush Wellman Singapore (S) Pte.
Ltd.
110 Paya Lebar Road, #02-01
409009 SINGAPORE

Delivery Item/Date
80308052 900001 /
06/08/2006

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R1 Tensile	kg/mm2	145.0	130.0	158.0
R1 Yield	kg/mm2	136.0	112.0	141.0
R1 Elongation	%	2.0	2.0	9.0
R1 Hardness Scale	-	HV		
R1 Hardness Value		409.0	383.0	445.0

Chemistry Composition

Beryllium	%	1.85	2.80	2.00
Ni+Co	%	0.25		0.35
Ni+Co+Fe	%	0.23		0.60
Silicon	%	0.05		0.15
Aluminum	%	0.03		0.10
Lead	%	0.36	0.20	0.40
Alloy Balance	-	COPPER		

Lot Identification

Heat Number	-	20033
Piece Lot/Coil No.	-	18335001

Miley J. Sheffer

Quality Representative



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欣賢科技股份有限公司
TAIYAO TECHNOLOGY CO., LTD.
台北縣五股工業區五權五路18號
NO. 18 WUCHUN 5TH RD. WUKU IND. ZONE, TAIPEI HSIEN, TAIWAN.



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下(The following sample(s) was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : 鍍銅
樣品型號(Style/Item No.) : C17203
收件日期(Sample Receiving Date) : 2007/1/3
測試期間(Testing Period) : 2007/1/3 TO 2007/01/10

- =====
測試需求 / Test Requested : 參照 RoHS 2002/95/EC 及其修定指令要求。 / In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
- 測試方法 / Test Method : (1) 參考BS EN 1122方法B:2001，用感應耦合電漿原子發射光譜儀檢測鎘含量。 / With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES.
(2) 參考US EPA 3050B方法，用感應耦合電漿原子發射光譜儀檢測鉛含量。 / With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES.
(3) 參考US EPA 3052方法，用感應耦合電漿原子發射光譜儀檢測汞含量。 / With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.
(4) 針對金屬材質之樣品，參考IEC 62321, Ed. 1 111/51/CEV方法檢測，用Spot test / Colorimetric方法檢測六價鉻含量。 / With reference to IEC 62321, Ed.1 111/51/CEV, Determination of Hexavalent Chromium for metallic samples by Spot test / Colorimetric Method.
(5) 參考US EPA 3540C方法，以氣相層析儀/質譜儀(GC/MS)檢測多溴聯苯和多溴聯苯醚含量。 / With reference to US EPA 3540C for PBBs/PBDEs Content. Analysis was performed by GC/MS.
- 測試結果 / Test Result(s) : 請見下一頁。
- 結論 / Conclusion : 根據客戶所提供樣品的測試結果，符合RoHS(2002/95/EC)及其修定指令之要求。 / Based on the performed tests on submitted samples, the test results are compliant with the limits of RoHS Directive 2002/95/EC and its subsequent amendments.


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

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日期：2007/01/10

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欣寶科技股份有限公司

TAIYAO TECHNOLOGY CO., LTD.

台北縣五股工業區五權五路18號

NO. 18 WUCHUN 5TH RD. WUKU IND. ZONE, TAIPEI HSIEN, TAIWAN.



測試結果 (單位: mg/kg) / Test Result(s)

測試項目 / Test Item (s):	測試方法 Method (Refer to)	結果 / Result	方法偵測 極限值 (MDL)	RoHS 限值
		No.1		
鎘 / Cadmium (Cd)	(1)	n.d.	2	100
鉛 / Lead (Pb)	(2)	3.9	2	1000
汞 / Mercury (Hg)	(3)	n.d.	2	1000
六價鉻 / Hexavalent Chromium Cr(VI) by Spot test / boiling water	(4)	Negative	See Note 5	#
多溴聯苯總和 / Sum of PBBs	(b)	n.d.	-	1000
一溴聯苯 / Monobromobiphenyl		n.d.	5	-
二溴聯苯 / Dibromobiphenyl		n.d.	5	-
三溴聯苯 / Tribromobiphenyl		n.d.	5	-
四溴聯苯 / Tetrabromobiphenyl		n.d.	5	-
五溴聯苯 / Pentabromobiphenyl		n.d.	5	-
六溴聯苯 / Hexabromobiphenyl		n.d.	5	-
七溴聯苯 / Heptabromobiphenyl		n.d.	5	-
八溴聯苯 / Octabromobiphenyl		n.d.	5	-
九溴聯苯 / Nonabromobiphenyl		n.d.	5	-
十溴聯苯 / Decabromobiphenyl		n.d.	5	-
多溴聯苯醚總和 (一至九溴) / Sum of PBDEs (Mono to Nona) (Note 4)		n.d.	-	1000
一溴聯苯醚 / Monobromobiphenyl ether		n.d.	5	-
二溴聯苯醚 / Dibromobiphenyl ether		n.d.	5	-
三溴聯苯醚 / Tribromobiphenyl ether		n.d.	5	-
四溴聯苯醚 / Tetrabromobiphenyl ether		n.d.	5	-
五溴聯苯醚 / Pentabromobiphenyl ether		n.d.	5	-
六溴聯苯醚 / Hexabromobiphenyl ether		n.d.	5	-
七溴聯苯醚 / Heptabromobiphenyl ether		n.d.	5	-
八溴聯苯醚 / Octabromobiphenyl ether		n.d.	5	-
九溴聯苯醚 / Nonabromobiphenyl ether	n.d.	5	-	
十溴聯苯醚 / Decabromobiphenyl ether	n.d.	5	-	
多溴聯苯醚總和 (一至十溴) / Sum of PBDEs (Mono to Deca)	n.d.	-	-	

測試部位描述 / TEST PART DESCRIPTION:

NO.1 : 銅色金屬 / COPPER COLORED METAL

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欣貿科技股份有限公司

TAIYAO TECHNOLOGY CO., LTD.

台北縣五股工業區五權五路18號

NO. 18 WUCHUN 5TH RD. WUKU IND. ZONE, TAIPEI HSIEN, TAIWAN.



Note: 1. mg/kg = ppm

2. n.d. = Not Detected / 未檢出

3. MDL = Method Detection Limit / 方法偵測極限值

4. Sew of Mono to NonBEE & according to 2005/717/EC DecaBDE is exempt.

根據2005年10月13日歐盟會議公佈2005/717/EC，修訂2002/95/EC內容，透過解除
高分子材質中十溴聯苯醚之使用限制。

5. Spot-test:

Negative = Absence of CrVI coating / surface layer.

Positive = Presence of CrVI coating / surface layer;

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

Negative-鍍層中偵測不到六價鉻，Positive-鍍層中偵測到六價鉻；

當該測項無法確認時，測試樣品可藉由boiling-water-extraction測試方法進一步確認

Boiling-water-extraction:

Negative = Absence of CrVI coating / surface layer.

Positive = Presence of CrVI coating / surface layer; the detected concentration in

boiling-water-extraction solution is equal or greater than 0.02 mg/kg with

50 cm² sample surface area.

Negative-鍍層中偵測不到六價鉻，Positive-鍍層中偵測到六價鉻；

該濃度溶液 ≥ 0.02 mg/kg with 50 cm² (sample surface area)

6. # = Positive indicates the presence of Hexavalent Chromium on the tested areas and result be regarded as not comply with RoHS requirement.

Positive表示測試區域之六價鉻不符合RoHS要求

Negative indicates the absence of CrVI on the tested areas and result be regarded as comply with RoHS requirement. / Negative表示測試區域之六價鉻符合RoHS要求

7. = Not Regulated / 無規格值

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致貿科技股份有限公司

TAIMAO TECHNOLOGY CO., LTD.

台北縣五股工業區五權五路18號

NO. 18 WUCHUN 5TH RD. WUKU IND. ZONE, TAIPEI HSIEN, TAIWAN.



** 報告結尾 **

APPENDIX

Fluo-Tech PTFE Rod is manufactured with virgin PTFE powder by ram extrusion or compression molding and is conformed to meet the requirement of ASTM.

TABLE 1 Detail Specification for PTFE Rod

ITEM	PROPERTY	ASTM TEST METHOD	VALUE
1	Specific gravity	D792	2.15 - 2.2
2	Tensile strength	D638	280 - 350 kg/cm ²
3	Elongation	D638	200 - 400 %
4	Dielectric strength	D149	30 KV/mm
5	Deformation under load. 6.9Mpa, 50c, %	D621	3.5 - 6
6	Dissipation factor 1 KHz	D150	Less than 0.0005
7	Dielectric constant 1 KHz	D150	2.0-2.1
8	Volume resistivity	D257	>10 ¹⁶
9	Surface resistivity	D257	10 ¹⁷
10	Flexural modulus	D790	430 - 500Mpa
11	Compressibility	D1147	16 - 20 %
12	Hardness, durometer	D2240	D53 - D60
13	Impact strength	D256	16 kg-cm/cm
14	Coefficient of linear thermal expansion, per C. 30C to 80C, 10 ⁻⁵ C	D696	12.3 to 11.6





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日期 : 2007/08/30

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宏庫貿易有限公司
台北市大安區青田街8-1號



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下：

樣品名稱 : 鐵弗龍
 收件日期 : 2007/08/23
 測試期間 : 2007/08/23 TO 2007/08/30

=====

 測試需求 : 參照 RoHS 2002/95/EC 及其修定指令要求。
 測試方法 : 參考 IEC 62321, Ed. 1 111/54/CDV 方法檢測。
 (1) 用感應耦合電漿原子發射光譜儀 (ICP-AES) 檢測鎘含量。
 (2) 用感應耦合電漿原子發射光譜儀 (ICP-AES) 檢測鉛含量。
 (3) 用感應耦合電漿原子發射光譜儀 (ICP-AES) 檢測汞含量。
 (4) 針對非金屬材質之樣品，用 UV-VIS 檢測六價鉻含量。
 (5) 以氣相層析儀/質譜儀 (GC/MS) 檢測多溴聯苯和多溴聯苯
 醚含量。
 測試結果 : 請見下一頁。

Daniel Yen, M.P., Operation Manager
 Signed for and on behalf of
SGS TAIWAN LTD.
 Chemical Laboratory - Taipei

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日期：2007/08/30

頁數：2 of 3

宏庫貿易有限公司
台北市大安區青田街8-1號

測試結果 (單位: mg/kg)

測試項目	測試方法 (請參考)	結果	方法偵測 極限值
		No.1	
鎘	(1)	n.d.	2
鉛	(2)	n.d.	2
汞	(3)	n.d.	2
六價鉻 (Alkaline extraction)	(4)	n.d.	2
多溴聯苯總和(PBBs)		n.d.	-
一溴聯苯		n.d.	5
二溴聯苯		n.d.	5
三溴聯苯		n.d.	5
四溴聯苯		n.d.	5
五溴聯苯		n.d.	5
六溴聯苯		n.d.	5
七溴聯苯		n.d.	5
八溴聯苯		n.d.	5
九溴聯苯		n.d.	5
十溴聯苯		n.d.	5
多溴聯苯醚總和(PBDEs) (一至九溴) (備註4)	(b)	n.d.	-
一溴聯苯醚		n.d.	5
二溴聯苯醚		n.d.	5
三溴聯苯醚		n.d.	5
四溴聯苯醚		n.d.	5
五溴聯苯醚		n.d.	5
六溴聯苯醚		n.d.	5
七溴聯苯醚		n.d.	5
八溴聯苯醚		n.d.	5
九溴聯苯醚		n.d.	5
十溴聯苯醚		n.d.	5
多溴聯苯醚總和(PBDEs) (一至十溴)		n.d.	-

測試部位描述:

NO.1 : 白色塑膠

備註: 1. mg/kg = ppm

2. n.d. = Not Detected (未檢出)

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

4. 根據2005年10月13日歐盟會議公佈2005/717/EC, 修訂2002/95/EC內容, 通過解除
高分子材質中十溴聯苯醚之使用限制。

5. "-" = Not Regulated (無規格值)

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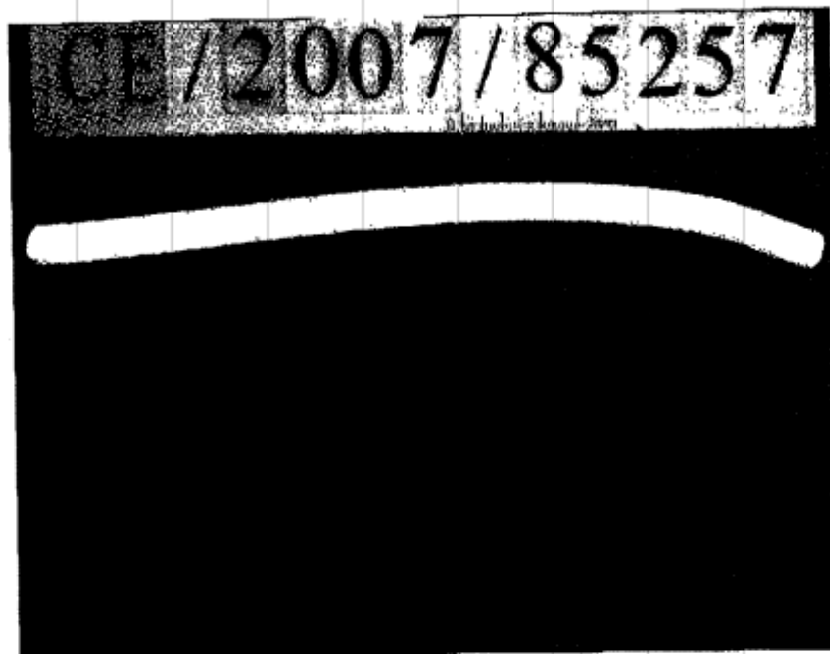
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台北市大安區青田街8-1號



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