

INDEX

Item	Content	Page
1.	天線規格表	1
2.	成品圖	2
3.	測試報告	3~5
4.	Cable 規格	6~10
5.	天線桿套材質特性	11
6.	天線固定座材質特性	12
7.	膠水特性及黏著力	13~17

RF Antenna Cable Assembly

Specification

1. Electrical Properties :

- 1.1 Frequency Rang..... 2.4GHz ~ 2.5GHz
- 1.2 Impedance 50 Ω Nominal
- 1.3 VSWR 1.92 Max.
- 1.4 Return Loss..... -10dB Maximum
- 1.5 Electrical Wave..... 1/2 λ Diople
- 1.6 Gain..... 1.8 dBi
- 1.7 Admitted Power..... 1W

2. Physical Properties :

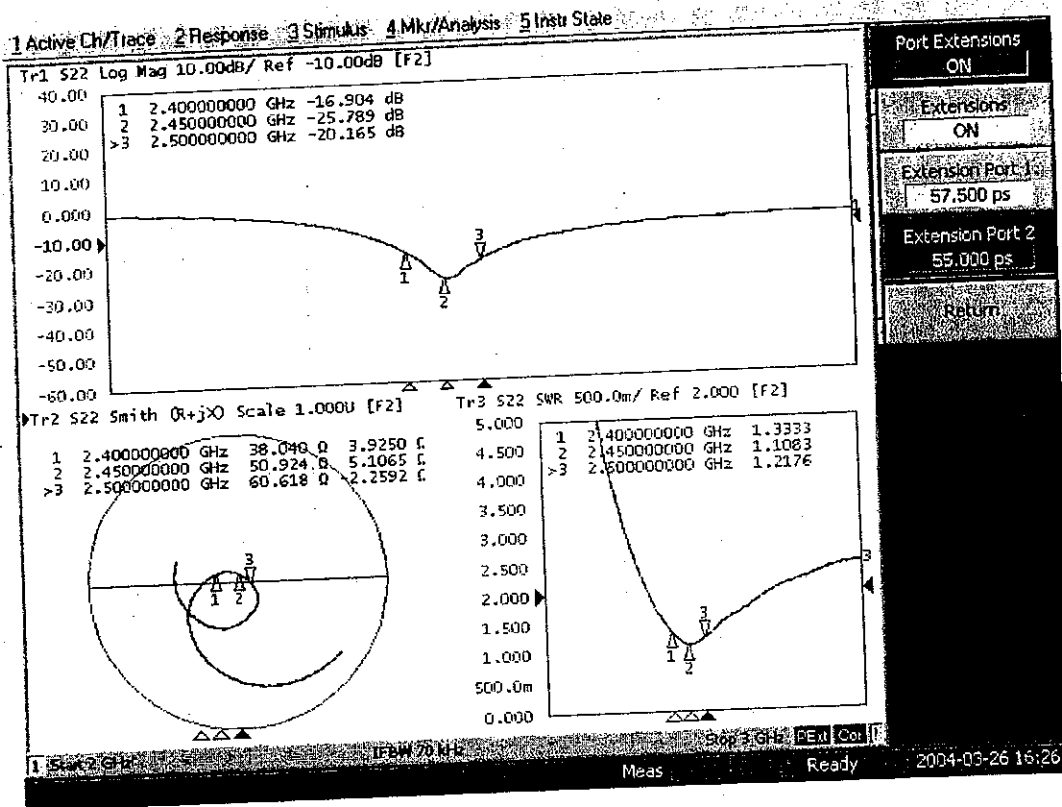
- 2.1 Cable..... RG-178 Cable
- 2.2 Antenna Cover..... TPU
- 2.3 Antenna Base..... PC
- 2.4 Operating Temp. -20°C ~ +65°C
- 2.5 Storage Temp. -30°C ~ +75°C
- 2.6 Color Gray(424U)
- 2.7 Connector..... SMA Plug Reverse



華裕實業股份有限公司
WHA YU INDUSTRIAL CO., LTD

RF Antenna Assembly

P/NO: C479-510129-A SPEC: 2.4GHz 1.8dBi



Port Extensions
ON

Extensions

ON

Extension Port 1

57.500 ps

Extension Port 2

55.000 ps

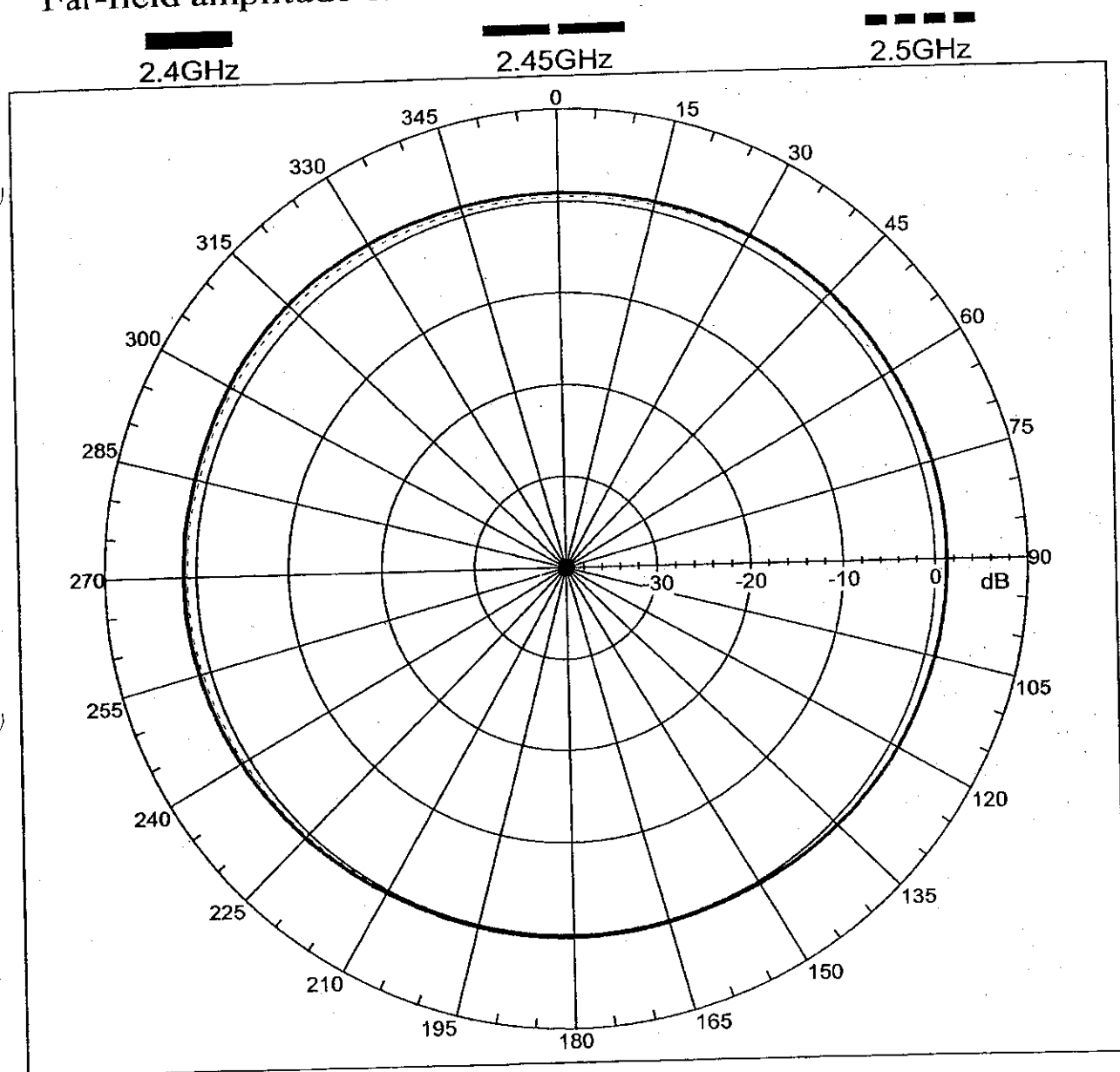
Return



譚裕實業股份有限公司

WHA YU INDUSTRIAL CO., LTD

Far-field amplitude of 2.4GHz small dipole antenna-H-plane.nsi



Nizing Electric Co., Ltd.

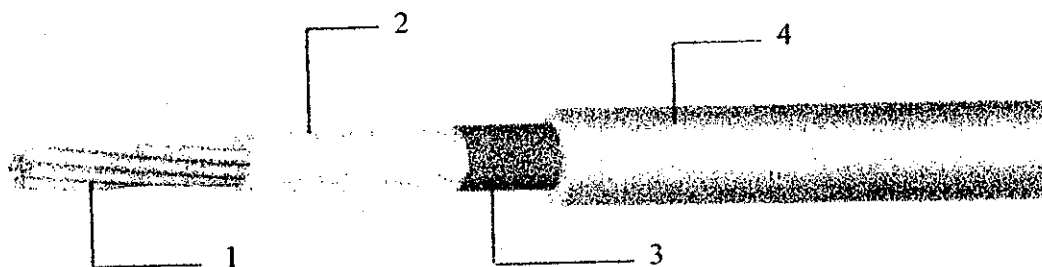
11-15 Santai Rd., Hsinchuang, Taipei Hsien, 242, Taiwan, R.O.C
Tel: 02-29016164 Fax: 29050644 E-mail: shenbinnizing@yahoo.com.tw

RG 178 B/U	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	1 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

I - Scope

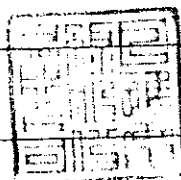
This specification presents a FEP insulated high-frequency coaxial cable AWG 30, 1.8 mm O.D. for internal wiring of electronic equipment, such as Computer / Notebook with wireless communication systems.

II - Construction



Item		Unit	Details
1. Inner Conductor	Material	—	CP-AG
	Composition	No./mm	AWG 30 or 7 × 0.1
	Dia. (approx.)	mm	0.305
2. Dielectric	Material	—	Extruded FEP
	Nom. O.D.	mm	0.84 ± 0.05
	Color	—	Natural
3. Outer Conductor	Material	—	Silver coated copper
	Composition	—	Braided (16 / 3 / 0.1)
	Dia. (approx.)	mm	1.29 ± 0.07
4. Jacket	Material	—	Extruded FEP
	Dia.	mm	1.80 ± 0.08
	Color	—	Standard color is Light Orange

Note :



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Shen Bin chao

Nizing Electric Co., Ltd.

11-15 Santai Rd., Hsinchuang, Taipei Hsien, 242, Taiwan, R.O.C.
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RG 178 B/U	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	2 / 2
PRODUCT STANDARD		ISSUED	21 Oct. 2003
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III - Characteristics

Item	Unit	Specified Value	Note
Temperature Rating	°C	-55 ~ +200	
Voltage Lasting	V	1000	
Dielectric strength	—	Dielectric core: No breakdown at AC 3 kv for 0.2 sec.	Spark test
		Jacket: No breakdown at AC 3 kv for 0.2 sec.	Spark test
Characteristic Impedance	Ω	50 ± 2	TDR method
Capacitance	pF / ft	29.4	
Attenuation. (Max.)	dB/100ft	16.0	100.0 MHz
		33.0	400.0 MHz
		52.0	1.0 GHz
		94.0	3.0 GHz
Approx. Weight	g / m	7.68	

Note :



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Cable Specification

Cable : Mil-C-17 Coaxial Cable RG-178

1. Construction :

- 1 Conductor..... 30AWG 7/38 SCCS
- 2 Dielectric..... PTFE OD : 0.033"±0.002"
- 3 Shielded..... 38AWG SPC OD : 0.051" Nominal
- 4 Jacket..... FEP OD : 0.071"±0.004"

2. Physical Properties :

- 1 Weight per 1000ft..... 6.3 lbs Maximum
- 2 Bend Radius..... 0.35" Minimum
- 3 Operating Temperature Range -55°C ~ 200°C

3. Electrical Properties:

- 1 Impedance..... 50±2 ohms
- 2 Capacitance..... 32 pF/ft Maximum
- 3 Cut off Frequency..... 116 GHz
- 4 Attenuation..... 45.0 dB/100ft @ 1GHz
64.4 dB/100ft @ 2GHz
79.7 dB/100ft @ 3GHz
92.7 dB/100ft @ 4GHz
104.3 dB/100ft @ 5GHz
115.0 dB/100ft @ 6GHz

MIL-C-17 Coaxial Cable QPL Approved

Single braid



Double braid



Triax



Twinax



Harbour supplies a complete line of high temperature, high performance QPL approved MIL-C-17 coax cables for the military, commercial and industrial applications. The specific M17 constructions referenced are manufactured in accordance with the most recent revision of the MIL-C-17 specification. The MIL-C-17 specification defines complete physical and electrical characteristics for each M17 part number, including dimensional parameters, dielectric materials, shield construction, maximum attenuation, and VSWR levels.

VSWR Sweep Testing

When selecting a 50 ohm coaxial cable, constructions with VSWR requirements are recommended. Manufacturing and sweep testing cables with concern for VSWR ensures a quality cable free of spikes over the referenced frequency range. (Note the test frequencies specified in the electrical characteristics section.)

Precision PTFE Dielectrics

All of the high temperature, high performance coax cables listed have PTFE dielectrics with high dielectric strength and low capacitance in proportion to the dielectric constant. All PTFE dielectrics are manufactured with tolerances tighter than the MIL-C-17 specification to ensure uniformity of electrical characteristics, especially impedance, attenuation and VSWR.

Tape wrapped PTFE Constructions

Harbour also manufactures PTFE tape wrapped cables to a previous revision of the MIL-C-17 specification. These constructions can withstand operating temperatures up to 250° C. versus 200° C. for FEP jacketed cables. Also, PTFE tape wrapped cables are generally more flexible than their FEP jacketed counterparts.

UL Approvals

All of Harbour's M17 part numbers manufactured to the MIL-C-17 specification may be ordered with UL and FT4 approvals.

Mil-C-17 Coaxial Cables

Physical Characteristics:

M17 Number	Center Conductor	PTFE Dielectric Diameter	Shield	Jacket	Overall Diameter	Minimum Recommended Bend Radius	Operating Temp. (°C)	Weight (lbs./MFT)	Comments
M17/60-RG142	.037" SCCS	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	43.0	
M17/93-RG178	.0120"(7/.004")SCCS	.033"	SPC	FEP	.071"	0.4"	-55 +200	6.3	
M17/93-00001	.0120"(7/.004")SCCS	.033"	SPC	PFA	.071"	0.4"	-55 +230	6.3	M17/93-RG178 w/extended temp. r.
M17/94-RG179	.0120"(7/.004")SCCS	.063"	SPC	FEP	.100"	0.4"	-55 +200	10.8	
M17/95-RG180	.0120"(7/.004")SCCS	.102"	SPC	FEP	.141"	0.7"	-55 +200	19.8	
M17/110-RG302	.0253"SCCS	.146"	SPC	FEP	.202"	1.0"	-55 +200	40.0	
M17/111-RG303	.037"SCCS	.116"	SPC	FEP	.170"	0.9"	-55 +200	31.0	
M17/112-RG304	.059"SCCS	.185"	SPC(2)	FEP	.280"	1.4"	-55 +200	94.0	
M17/113-RG316	.0201"(7/.0067")SCCS	.060"	SPC	FEP	.098"	0.5"	-55 +200	12.2	
M17/127-RG393	.094"(7/.0312")SC	.285"	SPC(2)	FEP	.390"	2.0"	-55 +200	165.0	
M17/128-RG400	.0384"(19/.008")SC	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	50.0	
N 31-RG403	.0120"(7/.004")SCCS	.033"	SPC(2)	FEP(2)	.116"	0.6"	-55 +200	15.0	Triaxial M17/93-RG178
M17/152-00001	.0201"(7/.0067")SCCS	.060"	SPC(2)	FEP	.114"	0.6"	-55 +200	18.5	Double shielded M17/113-RG316
M17/158-00001	.037"SCCS	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	56.0	Unswpt M17/60-RG142
M17/169-00001	.0120"(7/.004")SCCS	.033"	SPC	FEP	.071"	0.4"	-55 +200	6.3	Unswpt M17/93-RG178
M17/170-00001	.037"SCCS	.116"	SPC	FEP	.170"	0.9"	-55 +200	39.0	Unswpt M17/111-RG303
M17/172-00001	.0201"(7/.0067")SCCS	.060"	SPC	FEP	.098"	0.5"	-55 +200	11.5	Unswpt M17/113-RG316
M17/174-00001	.094"(7/.0312")SCCS	.285"	SPC(2)	FEP	.390"	2.0"	-55 +200	175.0	Unswpt M17/127-RG393
M17/175-00001	.0384"(19/.008")SC	.116"	SPC(2)	FEP	.390"	1.0"	-55 +200	50.0	Unswpt M17/128-RG400
M17/176-00002	.0235"(19/.005")SPA(2)	.042"	SPA	PFA	.129"	0.6"	-55 +230	18.0	Controlled impedance twinax
PTFE Tape Wrap Jacketed RG Cables									
RG 187 A/U	.0120"(7/.004")SCCS	.063	SPC	PTFE	.100"	0.5"	-55 +250	10.0	Flexible, 250° C. rat
RG 188 A/U	.0201"(7/.0067")SCCS	.060	SPC	PTFE	.100"	0.5"	-55 +250	11.0	Flexible, 250° C. rat
RG 195 A/U	.0120"(7/.004")SCCS	.102	SPC	PTFE	.141"	0.7"	-55 +250	18.0	Flexible, 250° C. rat
RG 196 A/U	.0120"(7/.004")SCCS	.034	SPC	PTFE	.067"	0.4"	-55 +250	6.0	Flexible, 250° C. rat

Electrical Characteristics:

Electrical Characteristics.				Maximum attenuation (dB/100ft) @						
M17 Number	Impedance (ohms)	Capacitance (pF/ft)	Max. Operating Voltage (RMS)	100 MHz	400 MHz	1 GHz	3 GHz	5 GHz	10 GHz	17.4 GHz
M17/60-RG142	50 +/- 2	29.4	1900	5.5	11.7	19.0	35.0	48.0	-	17.4
M17/93-RG178	50 +/- 2	29.4	1000	16.0	33.0	52.0	94.0	-	-	3.0
M17/93-00001	50 +/- 2	29.4	1000	16.0	33.0	52.0	94.0	-	-	3.0
M17/94-RG179	75 +/- 3	19.4	1200	-	21.0	-	-	-	-	-
M17/95-RG180	95 +/- 5	16.4	1500	-	17.0	-	-	-	-	-
M17/110-RG302	75 +/- 3	19.4	2300	-	8.0	-	26.0	-	-	-
M17/111-RG303	50 +/- 2	29.4	1900	3.9	8.0	15.0	28.0	-	-	-
M17/112-RG304	50 +/- 3	29.4	3000	2.7	6.4	11.1	22.0	30.0	-	8.0
M17/113-RG316	50 +/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3.0
M17/127-RG393	50 +/- 2	29.4	2500	2.4	5.0	8.8	18.0	24.6	37.0	11.0
M17/128-RG400	50 +/- 2	29.4	1900	4.5	10.5	17.0	38.0	50.0	78.0	12.4
M17/131-RG403	50 +/- 2	29.4	1000	-	37.0	-	-	-	-	10.0
M17/152-00001	50 +/- 2	29.4	1200	11.5	24.0	40.0	75.0	110.0	170.0	12.4
M17/158-00001	50 +/- 2	29.4	1900	-	9.5	-	-	-	-	-
M17/169-00001	50 +/- 2	29.4	1000	-	29.0	-	-	-	-	-
M17/170-00001	50 +/- 2	29.4	1900	-	8.6	-	-	-	-	-
M17/172-00001	50 +/- 2	29.4	1200	-	21.0	-	-	-	-	-
M17/174-00001	50 +/- 2	29.4	2500	-	5.0	-	-	-	-	-
M17/175-00001	50 +/- 2	29.4	1900	-	10.5	-	-	-	-	-
M17/176-00001	77 +/- 7	19.0	1000	-	-	-	-	-	-	-
PTFE Tape Wrap Jacketed RG Cables										
RG 187 A/U	75 +/- 3	19.4	1200	-	21.0	-	-	-	-	3
RG 188 A/U	50 +/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3
RG 195 A/U	95 +/- 5	15.4	1500	-	17.0	-	-	-	-	3
RG 196 A/U	50 +/- 2	29.4	1000	-	29.0	-	-	-	-	-

"Maximum frequencies" are those as referenced on individual short sheets of the Mil-C-17 specification. No values are given for unswept construction as the specification recommends these cables should not be used above 400 MHz. All figures referenced above are nominal unless otherwise specified.

Elastollan[®] S Series

Polyester Type

Technical Bulletin

Elastollan[®] S series of products are polyester-based thermoplastic polyurethanes that exhibit good hydrolytic stability. They also exhibit good oil, fuel and solvent resistance. These products can be injection molded, blow molded and extruded. All grades should be dried before processing. Elastollan[®] products can be stored for up to 1 year in their original container. Containers should be stored in a cool, dry area.

Extrusion grades: S85A and S90A

Injection molding grades: S85A to S64D

Physical Properties	Units	ASTM Method	S85A ³	S90A ³	S95A ³	S98A ³	S60D ³	S64D ³
Specific gravity	gr./cm ³	D-792	1.22	1.23	1.23	1.24	1.25	1.25
Hardness	Shore A D	D-2240	85 ± 2 -	92 ± 2 41 ± 2	96 ± 2 48 ± 2	98 ± 2 54 ± 2	- 60 ± 2	- 64 ± 2
Tensile strength	MPa psi	D-412	34 4900	39 5600	42 6100	42 6100	43 6200	39 5600
Tensile stress @100 % elongation	MPa psi	D-412	6.9 1000	11 1550	14 2000	19 2700	22 3200	27 3900
@300 % elongation	MPa psi		14 1980	20 2900	26 3800	32 4700	37 5300	37 5400
Elongation @brk.	%	D-412	690	540	510	425	450	380
Tensile set @brk.	%	D-412	35	55	70	80	110	135
Compression Set, % 22 hrs @ 23°C 22 hrs @ 70°C	%		25 35	25 45	25 45	30 45	40 50	45 55
Compression Set, %	%		45	35	35	40	45	50
Tear strength	N/mm lb./in.	D-624 DIE C	104 590	128 730	154 875	185 1050	195 1150	230 1300
Abrasion resistance	mg (Loss)	D-1044 ² (Taber)	25	25	30	50	50	50

Test samples were cured 20 hours @ 100°C before testing.

NOTE: ¹ These products can only be ordered in minimum quantities. Please contact your sales representative for details.

² H-18 wheel, 1000 gm weight and 1000 cycles.

³ Products with an N designation do not contain hydrolytic stabilizers. Contact Elastollan Technical Service Rep for further information.

Caution: Contact with product dusts from regrinding operations may cause temporary irritation of the eyes and the respiratory tract. Use with local exhaust. Under hot melt processing conditions (170-230°C), wear personal protective equipment to prevent thermal burns.

First aid: Eyes: Flush eyes with flowing water at least 15 minutes. If irritation develops, consult a physician. Skin: Skin contact with hot melt may cause thermal burns. Call a physician immediately. Inhalation: If vapors generated from the hot melt process are inhaled, move to fresh air. Aid in breathing. If breathing difficulties develop, see a physician immediately.

In case of fire: Use water fog, foam, CO₂, or dry chemical extinguishing media. Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

Disposal: Waste material, unused contents and empty containers must be disposed of in accordance with applicable local, state or federal regulations. Refer to our Material Safety Data Sheet for specific disposal instructions.

In case of chemical emergency: Call CHEMTREC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents. 800-424-9300.

Attention: This product is sold solely for use by industrial institutions. Refer to our Material Safety Data Sheet regarding safety, usage, applications, hazards, procedures and disposal of this product. Consult your supervisor for additional information.

No warranties of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth or that the products, designs, data or information may be used without infringing the intellectual property rights of others in no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale. Further, you expressly understand and agree that the descriptions, designs, data and information furnished by BASF hereunder are provided gratis and BASF assumes no obligation or liability for the description, designs data and information given or results obtained, all such being given and accepted at your risk.

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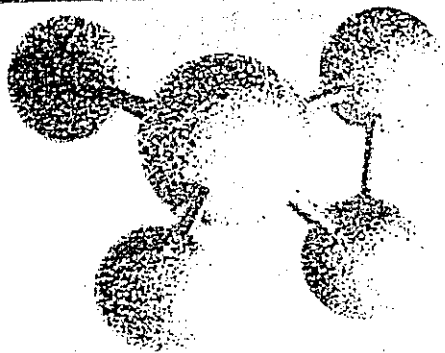
BASF

■Panlite L-1250Z

Category	Unit	Test Method	Condition	L-1250Z 100
Melt volume flow rate	cm ³ /10min	ISO 1133	300°C load 1.2kg	8
Density	kg/m ³	ISO 1183	—	1200
Water absorption rate	%	ISO 62	in water 23°C24h	0.2
Light transmission	%	ASTM D 1003	thickness 3mm	88
Refractive index	—	ASTM D 542	—	1.585
Tensile modulus	MPa	ISO 527-1 and ISO 527-2	1mm/min	2400
Tensile stress at yield	MPa		50mm/min	61
Tensile strain at yield	%		50mm/min	6
Nominal tensile strain at break	%		50mm/min	>50
Flexural modulus	MPa	ISO 178	2mm/min	2350
Flexural strength	MPa		2mm/min	93
Charpy impact strength	KJ/m ²	ISO 179	unnotched	NB
			notched	76
Heat deflection temperature	°C	ISO 75-1 and ISO 75-2	1.80MPa	129
			0.45MPa	142
Vicat softening temperature	°C	ISO 306	50°C/h 50N	149
Mold shrinkage	%	In-house method	parallel	0.5~0.7
			vertical	0.5~0.7
Coefficient of linear expansion	× 10 ⁻⁴ /°C	ISO 11359-2	parallel	0.7
			vertical	0.7
Specific inductive capacity	—	IEC 60250	100Hz	3.1
	—		1MHz	3
Dielectric loss tangent	× 10 ⁻⁴	IEC 60250	100Hz	10
	× 10 ⁻⁴		1MHz	90
Volume resistivity	Ω · m	IEC 60093	—	>1 × 10 ¹³
Surface resistivity	Ω	IEC 60093	—	>1 × 10 ¹⁵
Withstand voltage	MV/m	IEC 60243-1	short time test	30
Tracking resistance	—	IEC 60112	—	250
Flammability	—	UL 94	—	V-2(0.40mm) HB(1.5mm)
Temperature index	°C	UL 746B	electric 1.47mmt	125
			impact 1.47mmt	115
			non-impact 1.47mmt	125

※The values listed are specification values, not certified values.

Two-part adhesive		1590	High Super 5	EP-330 (High Super 30)	EP-331	1500	Super
Feature		curing for 5 min type		curing for 30 min type	curing for 30 min type Low- viscosity	Standard type	
Appearance	Base	Clear, blue	Translucent, blue	Translucent, pink	Clear, light yellow	Clear, light yellow	Translucent
	Hardener	Clear light yellow	Translucent, light yellow	Translucent, milk white	Clear, light yellow	Clear, light brown	Light yellow
Viscosity (Pa · S/20°C)	Base	8	120	80	7	25	100
	Hardener	12	70	170	7	60	50
Specific gravity (g/cm ³)	Base	1.17	1.17	1.17	1.16	1.16	1.14
	Hardener	1.11	1.15	1.14	1.16	0.97	0.99
Mixing ratio(Base : Hardener)		1 : 1	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1
Pot life		Within 5 min	Within 5 min	Within 30 min	Within 30 min	Within 1 hr	Within 1 hr
Tensile shear strength(N/mm ²)		19.0	18.0	17.5	17.6	15.7	15.1
T-Formed peeling adhesion (N/mm)		2.71	0.31	0.47		0.40	
Hardness(shore D)		77	77	82	71	82	
Coefficient of linear expansion (× 10 ⁻⁵)		8.6	10.7	6.7	4.1	7.1	
Tg(°C)			47	43		53.7	
Volume resistivity(Ω · cm)			4.9 × 10 ¹⁵	3.8 × 10 ¹¹	3.6 × 10 ¹¹	1.1 × 10 ¹⁶	
Coefficient of water absorption(%)			2.5	2.3		0.8	
Capacity standards		Base 1 kg Hardener 1 kg	6 g set 15 g set 25 g set 80 g set	320 ml set Base 3 kg Hardener 3 kg 6 g set, 15 g set, 80 g set	Base 1 kg Hardener 1 kg	Base 500 g, 1 kg, 3 kg, 15 kg Hardener 500 g, 1 kg, 3 kg, 15 kg	15 g set 40 g set 110 g set



施敏打硬 CEMEDINE 1500

〔一般性質〕

	主 劑	硬 化 劑
主 要 成 分	環氧 (Epoxy) 樹脂	聚醯胺 (Poly-Amido) 樹脂
顏 色 常 態	中間體黃色透明液體	色透明液體
不揮發率 (%)	99.6	99.4
黏度 (9/20°C)	350	600
比重 (20/20°C)	1.16	0.97
溶 劑	無	
硬化劑混合比例 phr	60~110	
保持粘度時間	參照混合硬化劑後的粘度變化表	
膠 化 時 間	3 小時	
硬化所需時間	6 小時 10 分鐘	
可保存時間 (20°C)	2 年	

〔特性〕

由兩種液體混合而成的環氧 (Epoxy) 樹脂系黏着劑，能在常溫下硬化，應用範圍至為廣泛，可穩定黏着金屬，塑膠以及其他各種物質。而由於此黏着劑，通常以聚醯胺 (Poly-Amido) 樹脂為其硬化劑，具有下列各優點：

1. 能在常溫下硬化。
2. 縱使所使用的硬化劑份量不同，也不影響其特性。
3. 由於能產生比一般黏着劑富有韌性的黏着層，縱使黏着不同材質的物品，也能以黏着層緩和熱膨脹的差別所引起的兩物品彎曲，對機械學的衝擊也能顯示較為良好的性能。
4. 由於能形成透明的黏着層，可以黏着透明的物質，如玻璃等等。

〔用 途〕

由於能強力黏着各種物質，諸如金屬，熱硬化塑膠，玻璃，飛機裝配以及一般家庭器具等等，應用範圍至為廣泛。

縱然是聚胺乙稀 (Polythylene)，聚酯 (Polyester)，天然以及人造橡膠等，以一般的黏着根本無法黏着的物質，如果加以適當的表面處理，即可強力黏着。

〔實 例〕

汽車、火車、船隻、飛機……，(將金屬把手黏着於玻璃窗) 可以黏着鋁製品，三聚氰胺 (Melamine) 袋的板等，於內部以增加強度/不同金屬間為防止腐蝕且加黏之/當作防震塗料亦可。

電器製品……，(由於是一種優秀的黏着劑，使用於高張力零件、替換機件的黏着/電磁器或外殼的黏着/線圈板的黏着/鐵箱內的黏着/馬達線圈的黏着等等)。

建築……，(將鋼、鐵工力門或將文字取黏於屋頂基佳把手/玻璃或磚以及其他硬質物品的加黏以及組立/不銹鋼製品、鋼製建柱、鋼管或土磚等需要強力黏着物品的加黏)。

高級裝飾品，玻璃以及塑膠製工藝品，精密機械……，(照像機、調整頭解像/金光碟等等的固定)。
其他諸如螺絲、運動器材、公路標誌等等的加黏。
除上述各種加黏外，也可以使用作填縫劑，諸如用，數層用以及襯裏用。

溫度 (°C)	時間 (分鐘)	黏度 (cP)
20	10	1000
40	10	600
60	10	300
80	10	150
100	10	75

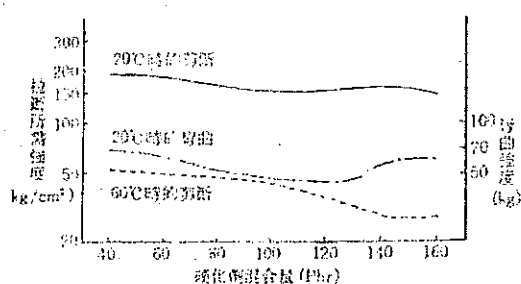


圖 II 2.1
硬化劑混合量與抗力強度
(在20°C 7天的硬化)
試驗片: 軟銅板 (25×100×1.6mm)
(Over-lap)12.5mm

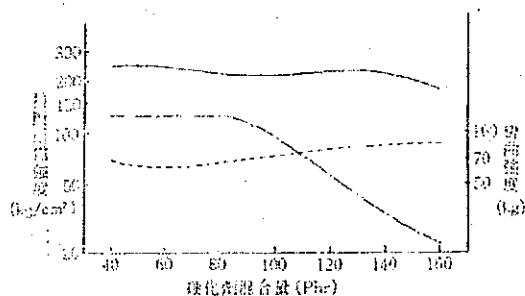


圖 II 2.2
硬化劑混合量與抗力強度
(在80°C 1小時的硬化)
試驗片: 以及其他同圖 II 2.1

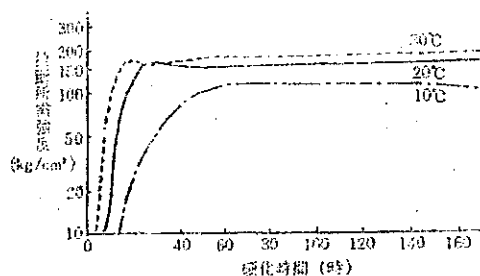


圖 II 2.3
常溫時的硬化特性 硬化劑混合率 100phr

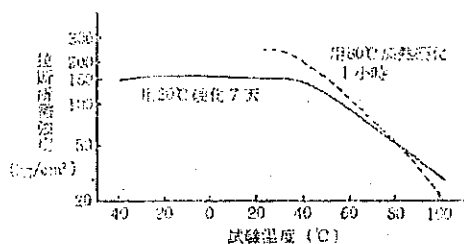


圖 II 2.5
耐熱特性 硬化劑混合率為 100phr

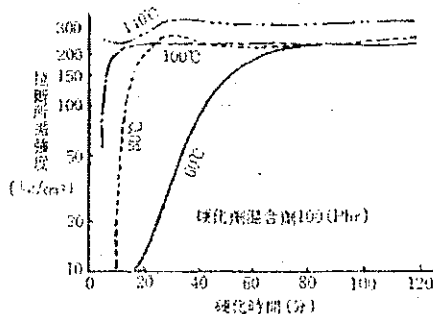


圖 II 2.1
加熱硬化特性 硬化劑混合率為 100phr

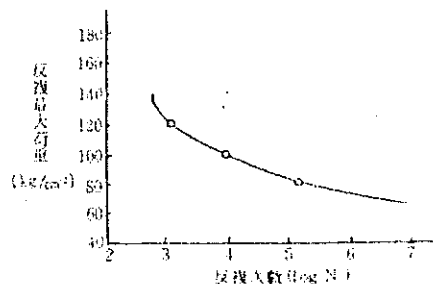


圖 II 2.6
老化特性

表 II 2.1 物理特性

抗張力 (kg/mm ²)	5.04	硬度	68
抗剪力 (kg/mm ²)	7.40	（ロクタクセルM）	67
抗曲張力 (kg/mm ²)	21.1	（バーコル）	82
抗剪張力 (kg/mm ²)	11.6	（ジョアーD）	
抗拉強度 (kg/mm ²)	15.10(6.31)(¹)	表面固定電阻 (Ω)	5.6×10^{11}
抗拉強度 (kg/mm ²)	47	體積固有電阻 (Ω-cm)	10.5×10^{11}
		誘電率 (10 ⁶ cycle)	2.94
		電壓破壞 (kv/mm)	19

表II 2.2 粘附所需強度

被粘物	粘附所需強度	被粘物	粘附所需強度 (20°C)
玻璃	83	多能片	22
聚氯乙稀膠材	106 水	苯二烯樹脂	19
封閉用材	99 水	聚克力片	30
膠材	66	聚丙酮樹脂	26
鐵	158	三聚氰胺製內板 (表面)	55
銅	61	三聚氰胺製飾板 (背面)	45
黃銅	80		
鋼	80		
鋁	71		
不銹鋼	50	F R P	125

[註] 1. 粘着條件: 20°C, 硬化7天, 硬化劑混合比 100phr(接合部over-lap)12.5mm。

2. 本記號者表示材料拉斷。

表II 2.3 促進劣化特性

試驗	未試驗前的粘附強度 (kg/cm ²)	比較調整試驗片的粘附強度(1) (1個月) (kg/cm ²)	經過各試驗1個月後的粘附強度 (kg/cm ²)	經過各試驗1,000小時後的粘附強度 (kg/cm ²)
利用調候儀所做的耐候試驗	143	150	—	166
利用噴射鹽水的促進試驗	143	150	100	—
利用高溫高濕的促進試驗(2)	143	150	143	—
利用反復冷熱的促進試驗(3)	143	150	183	—

[註] (1) 20±1°C, 65±5%RH 各保持1個月的試驗片; (2) 50°C100%RH; (3) -5°C8小時~50°C16小時。

表II 2.4 耐候性

粘附所需強度 (kg/cm ²)			
暴露前的粘附強度			
比較調整試驗片的粘附強度 (6個月) ※	150	在戶外暴露6個月的粘附強度	147
" (1年) ※	138	" 1年 "	152
" (2年) ※	130	" 2年 "	138
" (3年) ※	123	" 3年 "	137
" (10年) ※	111	" 10年 "	120

[註] ※20±1°C, 65±5%RH 保持各期間的試驗片。

表II 2.5 耐水性 (20°C, 7天硬化)

粘附所需強度 (kg/cm ²)					
試驗	時間	0	3個月	6個月	1年
耐水試驗		120	106	123	120
耐水試驗			109	117	109

[註] 硬化劑混合比為 100phr
試驗片: 不銹鋼 (100×25×1.5mm)
(接合部Over-lap)12.5mm。

表II 2.6 耐水性 (60°C, 2小時硬化)

粘附所需強度 (kg/cm ²)					
試驗	時間	0	3個月	6個月	1年
耐水試驗		157	150	169	163
海水試驗			133	108	116

[註] 同表II 2.5

GEMEDINE

拉拔耐油強度 (kg/cm²)

表II 2.7 耐油性

放置日數	1天	3天	5天	10天	20天	1個月
放置於20°C空氣中	---	---	---	80.0	---	79.0
0°C油中	---	---	77.5	87.5	---	89.0
20°C油中	---	---	82.5	77.6	---	89.5
70°C油中	---	---	80.0	74.3	---	71.0
循環油中 (cycle)	77.6	75.3	79.0	78.0	89.0	76.0

放置日數	40天	2個月	3個月	6個月	1年	104
放置於20°C空氣中	---	---	73.0	65.9	76.3	75.4
0°C油中	---	86.5	71.5	80.5	89.2	---
20°C油中	---	70.5	79.5	78.7	79.7	---
70°C油中	---	75.5	---	75.4	68.3	---
循環油中 (cycle)	71.5	---	---	---	---	---

[註] 1. 硬化劑混合比為80phr，試驗片單片 (100×25×3mm) 接合部 (Over-lap) 12.5mm 2. 油為硬脂油。
3. 試驗片全部破裂。

表II 2.8 耐溶劑、耐藥品性

種 類	試 驗 片	浸漬7天後的粘附力保持率 (%)		浸漬1個月後的粘附力保持率 (%)	
		以20°C硬化7天 的試驗片	以80°C硬化1小 時的試驗片	以20°C硬化7天 的試驗片	以80°C硬化1小 時的試驗片
溶 劑	已 烷	107.0	80.6	91.1	78.8
	苯	85.5	63.8	51.7	66.8
	三 氯 乙 烯	83.8	69.5	93.4	70.8
	丙 酮	89.5	71.3	97.4	68.7
	四 氫 呋 喃	90.2	64.7	101.3	69.1
油 類	三 氯 乙 烯	91.5	72.7	65.0	69.5
	機 油	102.7	90.8	107.3	90.3
藥 品	鹽 酸	96.2	87.8	98.1	84.2
	濃 縮 鹽 酸	93.4	72.3	96.3	69.3
	10% 硝 酸 溶 液	93.4	72.8	79.8	69.9
	10% 硫 酸 溶 液	71.7	67.8	70.3	57.2
	10% 苛 性 蘇 打 溶 液	97.2	71.3	83.8	74.3
	10% 食 鹽 水 溶 液	89.6	71.8	91.0	69.3
其 他	10% 醋 酸 溶 液	91.2	77.8	78.4	61.2

[註] 粘劑混合率 = 1 : 1，試驗片：硬膠片 (25×100×1.6mm) 但是浸漬試驗時使用了SUS-27，接合部 (Over-lap) 為 12.5mm。

容壁規格 = (主) (硬) 110g、1kg、15kg (組)



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