

PRODUCT INFORMATION

Elan-tron[®]

EC 5100/W 5620

(Rhenatech EP 5100/Härter EP 5620)

100:30

2-component unfilled epoxy potting compound

Application:

Castings and impregnation of wound components and electrical components which stators, winding heads rotors, wound magnetic, cores transformers, capacitors. Fast structural repair.

Processing:

Manual and/or automatic casting. Trickle impregnation and sealing. Room temperature or moderate temperature curing

Description:

Two component unfilled epoxy system, based on a pure resin with an excellent crystallization resistance. Low viscosity. Solvent free. Short pot life. Thermal classification F (155°C) (as per UL 1446). The system is RoHS compliant (European directive 2002/95/EC).

Instructions:

Add the appropriate quantity of hardener to the resin, mix carefully. Avoid air trapping. The components to be moulded should be dry, clean and free from grease and fat. The processing time at room temperature is influenced by the starting temperature of the components and exothermal reaction process as for all cold-curing systems. These factors are, above all, important for manual processing.

Curing / Post-curing:

For a room temperature curing system post-curing allows fast stabilization of the material and obtainment of the best electrical and mechanical properties. During the curing process it is advisable to avoid thermal variations higher than 10°C/hour.

Storage:

Epoxy resins and their hardeners can be stored for two years in the original sealed containers stored in a cool, dry place. The hardeners are moisture sensitive therefore it is good practice to close the vessel immediately after each use.

Handling precautions:

Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

SYSTEM SPECIFICATIONS

Property	Conditions	Method	Resin EC 5100	Hardener W 5620	UM
Viscosity at:	25°C	IO-10-50 (EN13702-2)	800÷1.200	-	mPas
Refraction index	25°C(EC)-23°C(W)	IO-10-91	1,5510÷1,5550	1,5205÷1,5245	

TYPICAL SYSTEM CHARACTERISTICS

Property	Conditions	Method	Value	UM
Resin Colour			Neutral	
Mixing ratio by volume		for 100 ml resin	100:40	ml
Mixing ratio by weight		for 100 g resin	100:30	g
Hardener Colour			Pale yellow	
Viscosity hardener	25°C	IO-10-50 (EN13702-2)	60÷120	mPas
Density resin	25°C	IO-10-51 (ASTM D 1475)	1,10÷1,14	g/ml
Density hardener	25°C	IO-10-51 (ASTM D 1475)	0,97÷1,03	g/ml
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	300÷600	mPas
	40°C	IO-10-50 (EN13702-2)	200÷300	mPas
Pot life (doubled initial viscosity)	40°C	IO-10-50 (EN13702-2) (*)	12÷20	min
Gelation time	25°C (15ml;6mm)	IO-10-73 (*)	2÷3	h
Gelation time	80°C (h= 70mm, d= 20mm)	IO-10-52d (UNI 8701)	3÷5	min
Demoulding time	25°C (15ml;6mm)	(*)	6÷7	h

TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 24 h TA + 15 h 60°C

Property	Conditions	Method	Value	UM
Surface			Bright	
Density	25°C	IO-10-54 (ASTM D 792)	1,06÷1,10	g/ml
Resin Colour				
Hardness	25°C	IO-10-58 (ASTM D 2240)	75÷80	Shore D/15
Glass transition (Tg)		IO-10-69 (ASTM D 3418)	55÷65	°C
Linear thermal expansion (Tg -10°C)		IO-10-71 (ASTM E 831)	65÷75	10 ⁻⁶ /°C
Linear thermal expansion (Tg +10°C)		IO-10-71 (ASTM E 831)	120÷140	10 ⁻⁶ /°C
Thermal conductivity		IO-10-87 (ASTM C518)	0,17÷0,22	W/(m°K)
Dielectric constant at:	25°C	IO-10-59 (ASTM D 150)	3,2÷3,6	
Loss factor at:	25°C	IO-10-59 (ASTM D 150)	5÷15	x 10 ⁻³
Volume resistivity at:	25°C	IO-10-60 (ASTM D 257)	3 x 10 ¹⁵ ÷5 x 10 ¹⁵	Ohm x cm
Dielectric strength	25°C	IO-10-61 (ASTM D 149) (2mm)	21÷23	kV/mm
Magnet wire type compatibility (NEMA classification)	MW 35 Polyester (base coat) Polyamide-imide (overcoat) MW 76 Polyester (base coat) Polyamide (overcoat)	Helical coil Helical coil	180 155	°C °C
Tracking index		IEC 60112	>600	CTI
Flexural strength		IO-10-66 (ASTM D 790)	105÷115	MN/m ²
Strain at break		IO-10-66 (ASTM D 790)	4,5÷6,5	%
Flexural elastic modulus		IO-10-66 (ASTM D 790)	3.000÷3.600	MN/m ²
Tensile strength		IO-10-63 (ASTM D 638)	65÷75	MN/m ²
Elongation at break		IO-10-63 (ASTM D 638)	4÷6	%

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Legenda:

IO-00-00 = Elantas Camattini's test method. The correspondent international method is indicated whenever possible.

nd = not determined na = not applicable RT = TA = laboratory room temperature (23±2°C)

Conversion units: 1 mPas = 1 cPs 1MN/m² = 10 kg/cm² = 1 MPa

(*) for larger quantities pot life is shorter and exothermic peak increases

(**) the brackets mean optionality

(***) The maximum operating temperature is given on the basis of laboratory information available being it function of the curing conditions used and of the type of coupled materials. For further possible information see post-curing paragraph.

Disclaimer:

The information given in this publication is based on the present state of our technical knowledge but buyers and users should make their own assessments of our products under their own application conditions.

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