

PRODUCT INFORMATION

Elan-tron[®]

MC 62/W 360
(MC 62/W 360)

100:13

2-component flame retardant epoxy potting compound

Application:

Encapsulation of: transformers, igniters, submersible pumps and elnoise filters.

Processing:

Manual casting. Under vacuum casting. Room temperature curing.

Description:

Two component self-extinguishing filled epoxy system. Solvent and halogens free. Low viscosity. Good electrical and mechanical properties. High thermal shock resistance. Long pot life. Low exothermic peak. Low shrinkage. To obtain the best mechanical, electrical and chemical properties the post-curing up to 40-50°C is advisable (at least). The system is RoHS compliant (European directive 2002/95/EC).

Instructions:

In pre-filled products it is good practice to check and carefully rehomogenize the material if some settling is present. Add the appropriate quantity of hardener to the resin, mix carefully. Avoid air trapping. For some applications it can be useful to pre-heat the components and/or carry out a de-aeration step under vacuum of the mixture before casting.

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. For hot curing systems it is advisable to follow the indications reported in the present data sheet verifying the correctness for the components under development. During the curing process it is advisable to avoid thermal variations higher than 10°C/hour.

Storage:

Filled epoxy resins and relative hardeners can be stored for one year and two years respectively, in the original sealed containers, stored in a cool, dry place. After that period or if the material has been stored in anomalous conditions, pre-filled resins can be settled down and their use is possible, only if they are accurately

re-homogenized with the help, if necessary, of a mechanical mixer. 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 MC 62	Hardener W 360	UM
Viscosity at:	25°C	IO-10-50 (EN13702-2)	9.000÷13.000	10÷40	mPas
Density at:	25°C	IO-10-51 (ASTM D 1475)	1,68÷1,72	-	g/ml

TYPICAL SYSTEM CHARACTERISTICS

Property	Conditions	Method	Value	UM
Mixing ratio by weight		for 100 g resin	100:13	g
Mixing ratio by volume		for 100 ml resin	100:23	ml
Resin Colour			Various colours	
Hardener Colour			Blue Neutral	
Density hardener	25°C	IO-10-51 (ASTM D 1475)	0,96÷0,99	g/ml
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	1.500÷2.500	mPas
	40°C	IO-10-50 (EN13702-2)	500÷1.000	mPas
Pot life	23°C (50mm;200ml)	IO-10-53 (*)	55÷60	min
	25°C (80mm;500ml)	IO-10-53 (*)	45÷50	min
Pot life (doubled initial viscosity)	40°C	IO-10-50 (EN13702-2) (*)	20÷30	min
Exothermic peak	23°C (80mm;500ml)	IO-10-53 (*)	95÷105	°C
Gelation time	25°C (15ml;6mm)	IO-10-73 (*)	5,0÷7,0	h
	40°C (15ml;6mm)	IO-10-73 (*)	2,5÷3,0	h
Gelation time	25°C 100 ml	IO-10-52a (UNI 8701)	60÷70	min
	60°C 100 ml	IO-10-52b (UNI 8701)	25÷35	min
Demoulding time	25°C (15ml;6mm)	(*)	20÷24	h
	40°C (15ml;6mm)	(*)	5,5÷6,5	h
Post-curing	60°C	(**)	(15)	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)	1,60÷1,64	g/ml
Hardness	25°C	IO-10-58 (ASTM D 2240)	86÷90	Shore D/15
Glass transition (Tg)		IO-10-69 (ASTM D 3418)	55÷60	°C
Linear thermal expansion (Tg -10°C)		IO-10-71 (ASTM E 831)	30÷40	10 ⁻⁶ /°C
Linear thermal expansion (Tg +10°C)		IO-10-71 (ASTM E 831)	120÷130	10 ⁻⁶ /°C
Thermal shock (n°10 cycles passed)		IO-10-67 (Olyphant washer)	- 55÷+ 180	°C
Flammability		IO-10-68 (UL 94 V-0)	4,0	mm
Max recommended operating temperature		IEC 60085 (***)	155	°C
Thermal conductivity		IO-10-87 (ASTM C518)	0,85÷0,95	W/(m°K)
Dielectric constant at:	25°C	IO-10-59 (ASTM D 150)	4,5÷5,0	
Loss factor at:	25°C	IO-10-59 (ASTM D 150)	30÷45	x 10 ⁻³
Volume resistivity at:	25°C	IO-10-60 (ASTM D 257)	3 x 10 ¹⁴ ÷8 x 10 ¹⁴	Ohm x cm
Dielectric strength	25°C	IO-10-61 (ASTM D 149)	20÷22	kV/mm
Flexural strength		IO-10-66 (ASTM D 790)	70÷80	MN/m ²
Strain at break		IO-10-66 (ASTM D 790)	0,9÷1,3	%
Flexural elastic modulus		IO-10-66 (ASTM D 790)	7.000÷7.800	MN/m ²
Tensile strength		IO-10-63 (ASTM D 638)	35÷40	MN/m ²
Elongation at break		IO-10-63 (ASTM D 638)	1,0÷1,8	%

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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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