

**PRODUCT INFORMATION**

**Elan-tron<sup>®</sup>**

**MC 62/W 363**

100:13

2-component flame retardant room temperature curing epoxy system

**Application:**

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

**Processing:**

Manual casting. Under vacuum casting. Room temperature curing.

**Description:**

Two component filled epoxy system, fluid. Self-extinguishing. The system is free from halogens and solvents. Good electrical and mechanical properties. Low shrinkage. Low exothermic peak. Good heat dissipation. Suitable for immersion in sea water. The system is UL 94 V-0 listed (File E116643). UL listed system for CTI, HAI, HWI, GWIT, GWFI (File E116643). The system is RoHS compliant (European directive 2002/95/EC). The material fulfills the requirements of UNI-CEI 11170-3 "Protection towards fire of rail-tramvehicles".

**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. 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. Long storage may cause filler settling mix the components before 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 363	UM
Viscosity at:	25°C	IO-10-50 (EN13702-2)	9.000÷13.000	10÷30	mPas
Density at:	25°C	IO-10-51 (ASTM D 1475)	1,68÷1,72	-	g/ml
Gelation time	25°C 100ml	IO-10-52a (UNI 8701)	-	52÷62	min

## TYPICAL SYSTEM CHARACTERISTICS

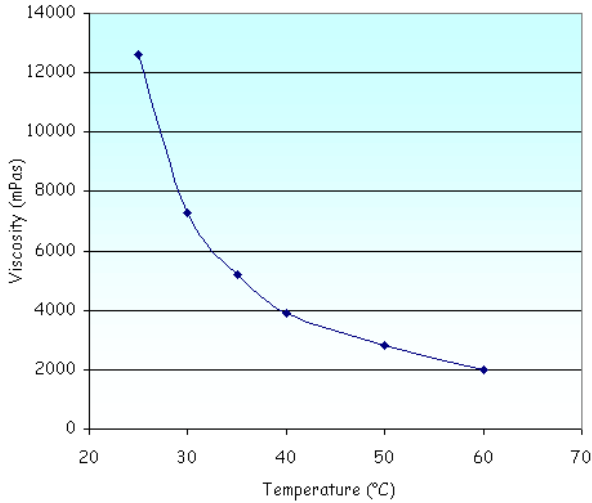
Property	Conditions	Method	Value	UM
Mixing ratio by weight		for 100 g resin	100:13	g
Mixing ratio by volume		for 100 ml resin	100:23	ml
Resin Colour			Various colours	
Hardener Colour			Blue Neutral	
Density hardener	25°C	IO-10-51 (ASTM D 1475)	0,97÷1,01	g/ml
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	1.400÷2.200	mPas
	40°C	IO-10-50 (EN13702-2)	800÷1.100	mPas
Pot life	25°C (50mm;200ml)	IO-10-53 (*)	25÷35	min
Pot life (doubled initial viscosity)	25°C	IO-10-50 (EN13702-2) (*)	35÷45	min
	40°C	IO-10-50 (EN13702-2) (*)	15÷25	min
Exothermic peak	25°C (50mm;200ml)	IO-10-53 (*)	100÷115	°C
Gelation time	25°C (15ml;6mm)	IO-10-73 (*)	2,5÷3,5	h
	40°C (15ml;6mm)	IO-10-73 (*)	1,0÷2,0	h
	50°C (15ml;6mm)	IO-10-73 (*)	50÷70	min
Gelation time	40°C 100ml	IO-10-52b (UNI 8701)	44÷52	min
Demoulding time	25°C (15ml;6mm)	(*)	8÷10	h
Post-curing	60°C	(**)	(15)	h

## TYPICAL CURED SYSTEM PROPERTIES

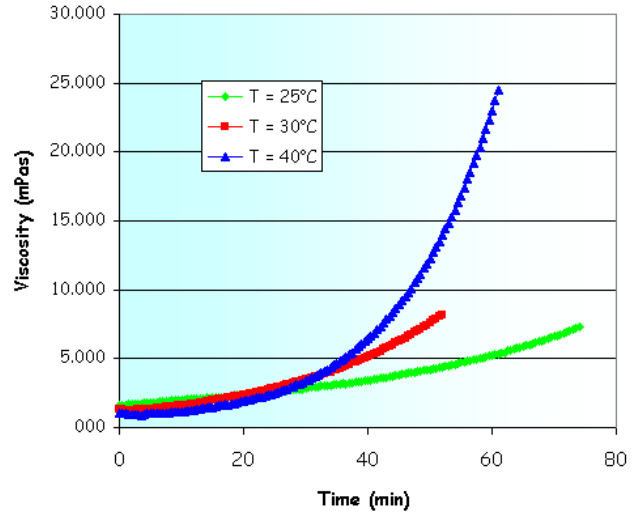
### Properties determined on specimens cured: 24 h TA + 15 h 60°C

Property	Conditions	Method	Value	UM
Surface			Bright	
Density	25°C	IO-10-54 (ASTM D 792)	1,61÷1,63	g/ml
Hardness	25°C	IO-10-68 (ASTM D 2240)	85÷90	Shore D/15
Glass transition (Tg)	1h50°C + 2h70°C 24hTA + 15h60°C	IO-10-69 (ASTM D 3418)	53÷58 60÷67	°C °C
Water absorption (24h RT)		IO-10-70 (ASTM D 570)	0,20÷0,30	%
Water absorption (2h 100°C)		IO-10-70 (ASTM D 570)	0,90÷1,10	%
Linear thermal expansion (Tg -10°C)		IO-10-71 (ASTM E 831)	35÷45	10 <sup>-6</sup> /°C
Linear thermal expansion (Tg +10°C)		IO-10-71 (ASTM E 831)	120÷130	10 <sup>-6</sup> /°C
Thermal shock (n°10 cycles passed)		IO-10-67 (inserto metallico Olyphant)	- 55÷+ 180	°C
Flammability		IO-10-68 (UL 94 V-0)	4	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	
Loss factor at:	25°C	IO-10-59 (ASTM D 150)	30÷50	x 10 <sup>-3</sup>
Volume resistivity at:	25°C	IO-10-60 (ASTM D 257)	2 x 10 <sup>14</sup> ÷10 x 10 <sup>14</sup>	Ohm x cm
Dielectric strength	25°C	IO-10-61 (ASTM D 149)	21÷24	kV/mm
Flexural strength		IO-10-66 (ASTM D 790)	63÷73	MN/m <sup>2</sup>
Maximum strain		IO-10-66 (ASTM D 790)	1,0÷1,5	%
Flexural elastic modulus		IO-10-66 (ASTM D 790)	6.500÷7.500	MN/m <sup>2</sup>
Tensile strength		IO-10-63 (ASTM D 638)	38÷45	MN/m <sup>2</sup>
Elongation at break		IO-10-63 (ASTM D 638)	1,0÷2,0	%
Compressive strength		IO-10-72 (ASTM D 695)	84÷88	MN/m <sup>2</sup>

**Fig. 1 Viscosity profile of the resin MC62 as function of temperature**



**Fig. 2 Viscosity profile of the resin/hardener mixture as function of temperature**



**Underwriters Laboratories Inc. (UL) - File E116643**

Component - Plastics E116643

**ELANTAS ITALIA SRL**  
VIA ANTOLINI 1, FRAZ LEMIGNANO, COLLECCHIO PR 43044 IT

**MC62/W363, MC633/W633**  
Epoxy Casting Compound (EP - Casting), furnished as two liquid components

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	4.0	V-0	0	0	-	-	-

Comparative Tracking Index (CTI): 0  
Dielectric Strength (kV/mm): -  
High-Voltage Arc Tracking Rate (HVTR): -  
Dimensional Stability (%): -

Inclined Plane Tracking (IPT): -  
Volume Resistivity (10<sup>9</sup> ohm-cm): -  
High Volt, Low Current Arc Resis (D495): -

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

Report Date: 1988-07-19  
Last Revised: 2009-10-26 © 2013 UL LLC

**IEC and ISO Test Methods**

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	4.0	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	4.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	4.0	900

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**Legenda:**

IO-00-00 = Elantas Italia'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/m<sup>2</sup> = 10 kg/cm<sup>2</sup> = 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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