

EN **Product Information**

Elan-tron®
MC H3003/W H3003 100:9
(Epoxylite ® H3003 RESIN/Epoxylite ® H 3003 HARDENER)

2-component epoxy potting compound

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Resin
MC H3003

Hardener
W H3003

Mixing ratio by weight
100:9

Application: Encapsulation, sealing and impregnation of electrical and electronic components.

Processing: Manual and/or automatic casting. Under vacuum casting with automatic mixing/dispensing devices. The system can be processed at room temperature or with the resin component pre-heated to 40-50°C. Best results are achieved when the material is processed under vacuum.

Description: Two component self-extinguishing, filled, epoxy system. Thermal class H (180°C). Good electrical and mechanical properties. High thermal conductivity. The system is UL 94 V-0 and listed (File E143115 and E116643). The system is RoHS conform (European directive 2002/95/EC).

SYSTEM SPECIFICATIONS

Resin

Viscosity at:	50°C	IO-10-50 (EN13702-2)	mPas	15.000	25.000
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	1,79	1,83
Gelation time	60°C 100 ml	IO-10-52b (UNI 8701)	min	22	32

Hardener

FTIR spectrum (correlation factor)		IO-10-75		0,990	1,000
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TYPICAL SYSTEM CHARACTERISTICS

Processing Data

Mixing ratio by weight		for 100 g resin	g	100:9
Mixing ratio by volume		for 100 ml resin	ml	100:17
Resin Colour				Black
Hardener Colour				Neutral
Viscosity at: 25°C Resin		IO-10-50 (EN13702-2)	mPas	40.000 50.000
40°C			mPas	20.000 30.000
60°C			mPas	3.000 6.000
Viscosity at: 25°C Hardener		IO-10-50 (EN13702-2)	mPas	15 30
Density at: 25°C Hardener		IO-10-51 (ASTM D 1475)	g/ml	0,94 0,98
Pot life (doubled initial viscosity)	40°C	IO-10-50 (EN13702-2) (*)	min	20 30
	60°C		min	8 14
Initial mixture viscosity at: 25°C		IO-10-50 (EN13702-2)	mPas	3.000 5.000
40°C			mPas	2.000 3.000
60°C			mPas	800 1.200
Gelation time 25°C (15ml;6mm)		IO-10-73 (*)	h	3 4
Gelation time 80°C 100ml		IO-10-52b (UNI 8701)	min	5 15
Demoulding time 25°C (15ml;6mm)		(*)	h	15 20
Suggested curing cycles		(**)		24 hours 25°C or 6 hours at 50°C

MC H3003/W H3003**TYPICAL CURED SYSTEM PROPERTIES****Properties determined on specimens cured: 24 h TA + 15 h 60°C**

Surface				Bright
Density 25°C	IO-10-54 (ASTM D 792)	g/ml	1,73	1,78
Hardness 25°C	IO-10-58 (ASTM D 2240)	Shore D/15	86	90
Glass transition (Tg)	IO-10-69 (ASTM D 3418)	°C	45	55
Linear thermal expansion (Tg -10°C)	IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	35	45
Linear thermal expansion (Tg +10°C)	IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	85	105
Flammability	IO-10-68 (UL 94 V-0)	mm	3	
Thermal conductivity	IO-10-87 (ASTM C518)	W/(m°K)	0,85	0,95
Dielectric constant at: 25°C	IO-10-59 (ASTM D 150)		4	5
Loss factor at: 25°C	IO-10-59 (ASTM D 150)	x 10 ⁻³	32	42
Volume resistivity at: 25°C	IO-10-60 (ASTM D 257)	Ohm x cm	1 x 10 ¹⁴	5 x 10 ¹⁴
Dielectric strength 25°C	IO-10-61 (ASTM D 149)	kV/mm	20	22
Tracking index	IEC 60112	CTI	> 600	
Flexural strength	IO-10-66 (ASTM D 790)	MN/m ²	40	50
Strain at break	IO-10-66 (ASTM D 790)	%	0,7	1,5
Flexural elastic modulus	IO-10-66 (ASTM D 790)	MN/m ²	6.000	6.500
Tensile strength	IO-10-63 (ASTM D 638)	MN/m ²	20	30
Elongation at break	IO-10-63 (ASTM D 638)	%	1,0	1,5

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 recommended operating temperature is given on the basis of available laboratory information. Users should make their own assessments to verify the real component thermal class which is the result of the applied construction technology and used protective materials.

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- Instructions:** It is advisable to pre-heat the resin at 50°C to make easier the application of the resin. 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.
- 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 one year 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.

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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.