EN

Product Information

Elan-tron®
MC 8160/WH 8160 100:100
(Epoxylite ® EIP 8160 RESIN/Epoxylite ® EIP 8160 HARDENER)

2-component hot curing epoxy system

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ELANTAS Electrical Insulation

Resin	Hardener	Mixing ratio by weight
MC 8160	**WH 8160**	**100:100**

Application: Encapsulation of components particularly sensitive to thermo-mechanical stress. Components operating up to 180°C.

Processing: Automatic casting with mixing/dispensing devices. Under vacuum impregnation. Hot curing. It is advisable to dry or pre-heat the components to be casted.

Description: Two component filled epoxy system, flexible. Good electrical and mechanical properties. Thermal class H (180°C). The system is RoHS conform (European directive 2002/95/EC).

SYSTEM SPECIFICATIONS

Resin					
Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	14.000	24.000
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	1,56	1,60
Gelation time	150°C	IO-10-52b (UNI 8701)	min	30	50
Hardener					
Viscosity at:	50°C	IO-10-50 (EN13702-2)	mPas	15.000	30.000
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	1,55	1,59

TYPICAL SYSTEM CHARACTERISTICS

Processing Data					
Mixing ratio by weight		for 100 g resin	g	100:100	
Mixing ratio by volume		for 100 ml resin	ml	100:100	
Resin Colour				Beige	
Hardener Colour				Black	
Pot life (doubled initial viscosity)	80°C	IO-10-50 (EN13702-2) (*)	min	100	120
	100°C		min	30	50
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	15.000	25.000
	60°C		mPas	6.000	9.000
	80°C		mPas	4.500	6.500
Gelation time	100°C (15ml;6mm)	IO-10-73 (*)	min	80	120
Demoulding time	100°C (15ml;6mm)	(*)	h	10	15
Suggested curing cycles		(**)	4hrs at 100°C + 4hrs at 140°C or 5hrs at 150°C		

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 4hrs at 100°C + 4hrs at 140°C

Surface				Semi-bright	
Density 25°C		IO-10-54 (ASTM D 792)	g/ml	1,54	1,58
Hardness 25°C		IO-10-58 (ASTM D 2240)	Shore D/15	25	29
25°C			Shore A/15	45	55
Glass transition (Tg)		IO-10-69 (ASTM D 3418)	°C	-30	-20
Linear thermal expansion (Tg +10°C)		IO-10-71 (ASTM E 831)	10^-6/°C	175	185
Thermal conductivity		IO-10-87 (ASTM C518)	W/(m°K)	0,50	0,60
Dielectric constant at:	25°C	IO-10-59 (ASTM D 150)		4,8	5,4
Loss factor at:	25°C	IO-10-59 (ASTM D 150)	x 10^-3	13	18
Volume resistivity at:	25°C	IO-10-60 (ASTM D 257)	Ohm x cm	1 x 10^13	5 x 10^13
Dielectric strength	25°C	IO-10-61 (ASTM D 149)	kV/mm	18	20
Tracking index		IEC 60112	CTI	> 600	
Flexural strength		IO-10-66 (ASTM D 790)	MN/m²	n.a.	n.a.
Strain at break		IO-10-66 (ASTM D 790)	%	n.a.	n.a.
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m²	n.a.	n.a.
Tensile strength		IO-10-63 (ASTM D 638)	MN/m²	0,6	0,9
Elongation at break		IO-10-63 (ASTM D 638)	%	15	25

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: In pre-filled products it is good practice to check and carefully rehomogenize the material if some settling is present. It can be useful to pre-heat the resin at 50-60°C and the components at 80 and/or carry out a dearation step under vacuum of the mixture before casting. Add the appropriate quantity of hardener to the resin, mix carefully. Avoid air trapping.

Curing Post-curing: For hot curing systems it is advisable to follow the indications reported in the present data sheet verifiyng the correctness for the components under development. 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. 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.

emission date: November 2008
revision n° 00