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Product Information

Elan-tech®

EC 201/W 340 100:32

2-component high thermal resistance RTM epoxy system

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Resin
EC 201

Hardener
W 340

Mixing ratio by weight
100:32

Application: Composite parts hot pressed.

Processing: Moulding by RTM moulding of glass, carbon, kevlar fabrics. Hot curing.

Description: Un-filled epoxy system with high elastic modulus. High thermal resistance.

TYPICAL SYSTEM CHARACTERISTICS

Resin

Resin Colour				Pale/yellow
Viscosity 25°C		IO-10-50 (ISO3219)	mPas	10.000 14.000
Density 25°C		IO-10-51 (ASTM D 1475)	g/ml	1,15 1,19

Hardener

Hardener Colour				Pale/yellow
Viscosity at: 25°C		IO-10-50 (ISO3219)	mPas	45 55
Density 25°C		IO-10-51 (ASTM D 1475)	g/ml	0,92 0,94

Processing Data

Mixing ratio by weight		for 100 g resin	g	100:32
Mixing ratio by volume		for 100 ml resin	ml	100:39
Pot life at:	60°C (200 mPas)	IO-10-50 (ISO3219)	min	10 14
	80°C (200mPas)		min	6 10
	100°C (200mPas)		min	4 6
Pot life	25°C (40mm;100ml)	IO-10-53 (*)	min	320 360
Exothermic peak	25°C (40mm;100ml)	IO-10-53 (*)	°C	65 70
Initial mixture viscosity at:	25°C	IO-10-50 (ISO3219)	mPas	1.200 1.800
	60°C		mPas	70 130
	80°C		mPas	40 80
	100°C		mPas	20 40
Gelation time	25°C (1mm)	IO-10-73 (*)	h	6,5 7,5
	60°C (1mm)		min	55 65
	80°C (1mm)		min	20 25
	100°C (1mm)		min	7 10

Suggested curing cycles (**): injection at 80°C + 30mins at 100°C

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: injection at 80°C + 30mins a 100°C + ramp 10°C/h + 2h at 170°C

Density 25°C		IO-10-54 (ASTM D 792)	g/ml	1,08	1,12
Hardness 25°C		IO-10-58 (ASTM D 2240)	Shore D/15	91	95
Glass transition (Tg)	inj at 80°C+30mins at 80°C	IO-10-69 (ASTM D 3418)	°C	162	168
	inj at 80°C+30mins at 100°C		°C	182	188
			°C	188	194
Maximum Tg		IO-10-69 (ASTM D 3418)	°C	--	198
Linear thermal expansion (Tg -10°C)		IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	50	58
Linear thermal expansion (Tg +10°C)		IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	130	150
Flexural strength		IO-10-66 (ASTM D 790)	MN/m ²	100	112
Strain at break		IO-10-66 (ASTM D 790)	%	4	6
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m ²	2.500	3.000
Tensile strength		IO-10-63 (ASTM D 638)	MN/m ²	54	60
Elongation at break		IO-10-63 (ASTM D 638)	%	2,5	3,2
Impact energy		IO-10-83 (ISO 179)	KJ/m ²	22	30

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/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.

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- Instructions:** Verify and when necessary, homogenize the components before use. Add the appropriate quantity of hardener to the resin, mix carefully. Avoid air trapping. Apply.
- Curing / Post-curing:** Post curing is always advisable for RT curing systems in order to stabilize the component and to reach the best properties. It is necessary when the component works at a high temperature. Post cure the tool as stated in the table, increasing gradually 10°C/hour. Cool it down slowly. The rate of heating and the indicated post-curing time are referred to standard specimen size. Users should evaluate the best conditions of curing or post-curing depending on the component size and shape. For big size components decrease the thermal gradient and increase the post-curing time. In case of thin layer applications and composites, post cure on the jig.
- Storage:** Epoxy resins and their hardeners can be stored for one year and two years respectively in the original sealed containers stored in a cool, dry place. The hardeners are moisture sensitive therefore it is good practice to close the container immediately after each use. Resin storage must be done at 10-20°C.
- 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.