

**EN Product Information**

Elan-tech®

EC 14/W 340

100:27

**Epoxy system at high temperature performance**

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Resin  
**EC 14**

Hardener  
**W 340**

Mixing ratio by weight  
**100:27**

**Application:** Composite parts for sport components hot pressed. Heat resistant tools for composite parts and pre-pregs.

**Processing:** Impregnation manual by roll, hand-lay up applications with or without vacuum bag for glass, carbon or kevlar fibers. The post-curing by subministration of heat is necessary to achieve the thermal resistance indicated in the data sheet. During lamination it is advisable to realize thickness up to 5 mm. If the lamination must be interrupted, it is advisable to remove mechanically the last layer of the resin before starting again the stratification.

**Description:** Un-filled epoxy system. thermoresistant The excellent mechanical characteristics are maintained up to 100°C.

**SYSTEM SPECIFICATIONS**

**Resin**

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	6.000	8.000
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**Hardener**

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	45	55
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**TYPICAL SYSTEM CHARACTERISTICS**

**Processing Data**

Resin Colour				Pale/yellow	
Hardener Colour				Pale/yellow	
Mixing ratio by weight		for 100 g resin	g	100:27	
Mixing ratio by volume		for 100 ml resin	ml	100:33	
Density	25°C Resin	IO-10-51 (ASTM D 1475)	g/ml	1,13	1,17
Density	25°C Hardener	IO-10-51 (ASTM D 1475)	g/ml	0,92	0,94
Pot life	25°C (40mm;100ml)	IO-10-53 (*)	min	80	100
Exothermic peak	25°C (40mm;100ml)	IO-10-53 (*)	°C	170	190
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	1.400	2.000
Gelation time	25°C (15ml;6mm)	IO-10-73 (*)	h	3	5
Gelation time	80°C 100ml	IO-10-52b (UNI 8701)	min	9	13
Demoulding time	25°C (15ml;6mm)	(*)	h	18	24
Maximum recommended thickness			mm	5	
Suggested curing cycles		(**)		24h TA + 15h 130	

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**TYPICAL CURED SYSTEM PROPERTIES**

**Properties determined on specimens cured: 24h TA + 15h 130**

Colour				Pale yellow
Machinability				Excellent
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	86 90
Glass transition (Tg)	24h RT+ 6h 50°C	IO-10-69 (ASTM D 3418)	°C	72 78
	24h RT + 15h 130°C		°C	145 150
Maximum Tg	15h 150°C	IO-10-69 (ASTM D 3418)	°C	150 155
Water absorption (24h RT)		IO-10-70 (ASTM D 570)	%	0,08 0,10
Water absorption (2h 100°C)		IO-10-70 (ASTM D 570)	%	0,50 0,70
Max recommended operating temperature		(***)	°C	140
Flexural strength		IO-10-66 (ASTM D 790)	MN/m <sup>2</sup>	80 90
Maximum strain		IO-10-66 (ASTM D 790)	%	3 5
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m <sup>2</sup>	2.700 3.300
Tensile strength		IO-10-63 (ASTM D 638)	MN/m <sup>2</sup>	45 55
Elongation at break		IO-10-63 (ASTM D 638)	%	2 3
Compressive strength		IO-10-72 (ASTM D 695)	MN/m <sup>2</sup>	70 80

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.

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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. For the surface preparation (mould or model) refer to the release agents data sheet.
- 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 the case of thin layer applications and composites, post cure on the jig.
- Storage:** Epoxy resins and their hardeners can be stored for two years in the original sealed containers stored in a cool, dry place. The hardeners are moisture sensitive therefore it is good practice to close the vessel immediately after each use. The hardeners may crystallize at low temperatures. To restore the original conditions, heat the material at 40-50°C avoiding local overheating. Before use, the product must be rehomogenized and cooled down at room temperature.
- 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.