

EN **Product Information**

Elan-tech®

EC 157/K 58

100:31

ELANTAS EUROPE Sales offices:

Strada Antolini n°1 loc. Lemignano
43044 Collecchio (PR)
Italy
Tel +39 0521 304777
Fax +39 0521 804410

Grossmannstr. 105
20539 Hamburg
Germany
Tel +49 40 78946 0
Fax +49 40 78946 349

info.elantas.europe@altana.com
www.elantas.com

Resin
EC 157

Hardener
K 58

Mixing ratio by weight
100:31

- Application:** High performance composite parts of medium and large size. Manufacturing of structural parts of boats sport components.
- Processing:** Manual mixing or mechanical mixing with automatic mixing/dispensing machines. Impregnation manual by infusion or under vacuum infusion (SCRIMP) of glass, carbon, kevlar fabrics. Room temperature or hot curing.
- Description:** Two component unfilled epoxy system. Long pot life. Low viscosity. Solvent free. Good thermal resistance. The system cured at RT may be brittle and it can be necessary the curing at 40°C before demoulding the model.

SYSTEM SPECIFICATIONS

Resin

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	500	600
---------------	------	----------------------	------	-----	-----

Hardener

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

TYPICAL SYSTEM CHARACTERISTICS

Processing Data

Mixing ratio by weight		for 100 g resin	g	100:31
Mixing ratio by volume		for 100 ml resin	ml	100:39
Resin Colour				Colourless
Hardener Colour				Colourless
Viscosity at: 25°C Hardener		IO-10-50 (EN13702-2)	mPas	50 100
Density at: 25°C Resin		IO-10-51 (ASTM D 1475)	g/ml	1,14 1,16
Density at: 25°C Hardener		IO-10-51 (ASTM D 1475)	g/ml	0,91 0,93
Pot life 25°C (40mm;100ml)		IO-10-53 (*)	min	70 85
Exothermic peak 25°C (40mm;100ml)		IO-10-53 (*)	°C	160 180
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	300 500
	35°C		mPas	150 250
Post-curing 120°C		(**)	h	6
Suggested curing cycles		(**)		24h 40°C + salita a 120°C in 8h+ 6h 120°C

EC 157/K 58

TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 24h 40°C + salita a 120°C in 8h+ 6h 120°C

Colour			Pale yellow	
Density	IO-10-54 (ASTM D 792)	g/ml	1,08	1,10
Hardness	IO-10-58 (ASTM D 2240)	Shore D/15	85	87
Glass transition (Tg)	IO-10-69 (ASTM D 3418)	°C	114	120
Maximum Tg	6h 150°C	IO-10-69 (ASTM D 3418)	°C	126 132
Water absorption (24h RT)	IO-10-70 (ASTM D 570)	%	0,05	0,10
Water absorption (2h 100°C)	IO-10-70 (ASTM D 570)	%	0,45	0,55
Flexural strength	IO-10-66 (ASTM D 790)	MN/m ²	92	104
Maximum strain	IO-10-66 (ASTM D 790)	%	4,0	6,0
Strain at break	IO-10-66 (ASTM D 790)	%	4,0	6,0
Flexural elastic modulus	IO-10-66 (ASTM D 790)	MN/m ²	2.500	3.100
Tensile strength	IO-10-63 (ASTM D 638)	MN/m ²	38	47
Elongation at break	IO-10-63 (ASTM D 638)	%	2,0	4,0
Compressive strength	IO-10-72 (ASTM D 695)	MN/m ²	82	92

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.

EC 157/K 58

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. Hardener K58 may crystallize at low temperatures. To restore the original conditions, heat the material at 70-80°C avoiding local overheating. Before use, the product must be rehomogenized and cooled down at room temperature. 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.

emission date:	December	1999
revision n° 04	October	2008

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.