

EN Product Information

Elan-tech®

EC 157/W 152 MR 100:30

EC 157/W 152 LR 100:30

Sales office South Europe:

ELANTAS Italia S.r.l.
Strada Antolini n° 1 loc. Lemignano
43044 Collecchio (PR)
Italy
Tel +39 0521 304711
Fax +39 0521 804410
EEMEurope.ELANTAS@altana.com
www.elantas.com

Sales office North Europe:

ELANTAS Beck GmbH
Grossmannstr. 105
20539 Hamburg
Germany
Tel +49 40 78946 0
Fax +49 40 78946 349
info.elantas.beck@altana.com
www.elantas.com

Resin
EC 157

Hardener
W 152 MR
W 152 LR

Mixing ratio by weight
100:30
100:30

Application: High performance composite parts of small and medium size.

Processing: Manual mixing or mechanical or with automatic mixing/dispensing machines. Impregnation by infusion or under vacuum infusion (SCRIMP) of glass, carbon, kevlar fabrics. Room temperature curing.
 W 152 MR: High reactivity for small components.
 W 152 LR: Medium reactivity.
 W 152 MLR: Medium-slow. Medium and large size components (look TDS EC 157/W152 MLR).
 W 152 XLR: Long pot life. Large size components (look TDS EC157/W152 XLR).

Description: Two component epoxy system, fluid. Good thermal resistance. Curing at room temperature plus the post-curing at a moderate temperature (50-60°C) allows to obtain high performances.

SYSTEM SPECIFICATIONS

Resin

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

Hardener W 152 MR

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	30	60
---------------	------	----------------------	------	----	----

Hardener W 152 LR

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	20	40
---------------	------	----------------------	------	----	----

TYPICAL SYSTEM CHARACTERISTICS

Resin

Resin Colour				Colourless	
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	1,14	1,16

Hardeners

				W 152 MR	W 152 LR
Hardener Colour				Pale yellow	Pale yellow
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	0,94 0,98	0,93 0,97

Processing Data

Mixing ratio by weight		for 100 g resin	g	100:30	100:30
Mixing ratio by volume		for 100 ml resin	ml	100:37	100:37
Pot life	25°C (50mm;200ml)	IO-10-53 (*)	min	40 50	110 130
Exothermic peak	25°C (50mm;200ml)	IO-10-53 (*)	°C	180 200	170 190
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	200 300	150 250
Gelation time	25°C (1mm)	IO-10-88 (ASTM D5895-03)	h	6 8	10 12
Demoulding time	25°C (15ml;6mm)	(*)	h	10 12	24 32

EC 157

TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 24 h TA + 15 h 60°C

			W 152 MR		W 152 LR	
Colour			Pale yellow		Pale yellow	
Machinability			Excellent		Excellent	
Density 25°C	IO-10-54 (ASTM D 792)	g/ml	1,08	1,12	1,08	1,12
Hardness 25°C	IO-10-58 (ASTM D 2240)	Shore D/15	85	89	84	88
Glass transition (Tg)	7gg TA/RT 24h TA+15h 50°C 24h TA+15h 60°C	IO-10-69 (ASTM D 3418)	°C		56	62
			°C		72	76
			°C		80	86
Maximum Tg	15h 90°C	IO-10-69 (ASTM D 3418)	°C		92	98
Water absorption (24h RT)	IO-10-70 (ASTM D 570)	%	0,15	0,20	0,10	0,20
Water absorption (2h 100°C)	IO-10-70 (ASTM D 570)	%	0,55	0,70	0,60	0,70
Max recommended operating temperature	(***)	°C	90		90	
Flexural strength	IO-10-66 (ASTM D 790)	MN/m ²	113	127	110	120
Maximum strain	IO-10-66 (ASTM D 790)	%	5,0	7,0	5,0	7,0
Strain at break	IO-10-66 (ASTM D 790)	%	6,0	8,0	6,0	8,0
Flexural elastic modulus	IO-10-66 (ASTM D 790)	MN/m ²	3.100	3.500	3.200	3.600
Tensile strength	IO-10-63 (ASTM D 638)	MN/m ²	64	72	67	75
Elongation at break	IO-10-63 (ASTM D 638)	%	6,0	8,0	6,0	8,0
Compressive strength	IO-10-72 (ASTM D 695)	MN/m ²	92	104	91	103

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

- Instructions:** Before use verify if components are perfectly transparent. Add the appropriate quantity of hardener to the resin, mix carefully. Avoid air trapping. If the mixing is carried on with dosing/mixing equipment deaeration of the mixture is not necessary. On the contrary evaluate if it is necessary as function of vacuum applied during infusion.
- 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. 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. As general guide to minimize the risk of thermal deformations we suggest to carry on the post-curing in the following way: - on mould: 24 h RT + 6 h 40°C + 6 h 50°C +12 h 60°C. - out of the mould but on the jig: 7 days RT + 6 h 40°C + 6 h 50°C + 12 h 60°C.
- 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.
- Handling
precautions:** Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

emission date:	April	2008
revision n° 01	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.