

EN Product Information

Elan-tech®

MC 151F/W 243 100:12

MC 151F/W 101 100:12

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Resin
MC 151F

Hardener
W 243
W 101

Mixing ratio by weight
100:12
100:12

Application: Foundry patterns, copy models, gauges, press tools.

Processing: MC151F/W243: solid casting (max thickness .20-30 mm). Room temperature curing.
MC151F/W101: face and solid casting (max thickness 10-20 mm). Room temperature curing.

Description: Two component epoxy system filled with metallic fillers (steel). High toughness. Machinable.

SYSTEM SPECIFICATIONS

Resin

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	45.000	60.000
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	2,62	2,66

Hardener W 243

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	250	350
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Hardener W 101

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	150	250
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TYPICAL SYSTEM CHARACTERISTICS

Resin

Resin Colour	Black
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Hardeners

				W 243	W 101
Hardener Colour				Colourless	Pale/yellow
Density	25°C	IO-10-51 (ASTM D 1475)	g/ml	0,98 1,02	0,99 1,01

Processing Data

Mixing ratio by weight			for 100 g resin	g	100:12	100:12
Mixing ratio by volume			for 100 ml resin	ml	100:32	100:32
Pot life	25°C	(50mm;200ml) (80mm;500ml)	IO-10-53 (*)	min	50 60 40 50	35 45 - -
Exothermic peak	25°C	(50mm;200ml) (80mm;500ml)	IO-10-53 (*)	°C	60 65 90 100	70 80 - -
Initial mixture viscosity at:	25°C		IO-10-50 (EN13702-2)	mPas	7.000 16.000	7.000 16.000
Gelation time	25°C	(15ml;6mm)	IO-10-73 (*)	h	4,0 4,5	2,5 3,5
Demoulding time	25°C	(15ml;6mm)	(*)	h	21 26	10 15
Post-curing	60°C		(**)	h	(10-15)	(10 - 15)
Maximum recommended thickness				mm	20-30	10-20

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TYPICAL CURED SYSTEM PROPERTIES

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

			W 243		W 101	
Colour			Black		Black	
Machinability			Excellent		Excellent	
Density 25°C	IO-10-54 (ASTM D 792)	g/ml	2,20	2,40	2,20	2,40
Hardness 25°C	IO-10-58 (ASTM D 2240)	Shore D/15	80	84	82	86
Glass transition (Tg)	24 h TA + 15 h 60°C	IO-10-69 (ASTM D 3418)	°C		68	74
			°C		48	54
	48 h TA				50	56
Linear shrinkage	IO-10-74 b	%	1,9	2,3	2,0	2,4
Water absorption (24h RT)	IO-10-70 (ASTM D 570)	%	0,03	0,06	0,03	0,05
Water absorption (2h 100°C)	IO-10-70 (ASTM D 570)	%	0,30	0,40	0,20	0,30
Linear thermal expansion (Tg -10°C)	IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	52	58	48	54
Linear thermal expansion (Tg +10°C)	IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	150	160	125	135
Max recommended operating temperature	(***)	°C	65		70	
Flexural strength	IO-10-66 (ASTM D 790)	MN/m ²	75	85	80	90
Maximum strain	IO-10-66 (ASTM D 790)	%	2,0	2,4	1,8	2,2
Flexural elastic modulus	IO-10-66 (ASTM D 790)	MN/m ²	4.300	4.800	6.000	6.500
Tensile strength	IO-10-63 (ASTM D 638)	MN/m ²	52	58	45	50
Elongation at break	IO-10-63 (ASTM D 638)	%	1,9	2,3	1,6	2,0
Compressive strength	IO-10-72 (ASTM D 695)	MN/m ²	88	93	90	95

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. 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: Filled epoxy resins and relative hardeners can be stored for one year and two years respectively, in the original sealed containers, stored in a cool, dry place. After that period or if the material has been stored in anomalous conditions, pre-filled resins can be settled down and their use is possible, only if they are accurately re-homogenized with the help, if necessary, of a mechanical mixer. 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.

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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.