

EN

Product Information

Elan-tech®

MG 536/W 503

100:19

Heat resistant epoxy gelcoat

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
MG 536

Hardener
W 503

Mixing ratio by weight
100:19

Application: Moulds for epoxy pre-pregs. Small and medium size tools and heat resistant moulds until 150°C.

Processing: Brush application for thick layer (0,5-1mm). Room temperature curing. The curing process can be accelerated by the use of moderate temperature (35-40°C). The system cured at RT may be brittle and it can be necessary the curing at 40°C before demoulding the model.

Description: Two component epoxy system. Thixotropic. High thermal resistance. High chemical resistance. Bright reproduction of mirror models. The system is RoHS compliant (European directive 2002/95/EC) and the new RoHS Directive 2011/65/EU (RoHS 2) entered into force on 21 July 2011 and requires Member States to transpose the provisions into their respective national laws by 2 January 2013.

TYPICAL SYSTEM CHARACTERISTICS

Resin

Resin Colour			Brown	
Viscosity 25°C	IO-10-95 (ISO3219)	mPas	60.000	100.000
Density 25°C	IO-10-51 (ASTM D 1475)	g/ml	1,49	1,53

Hardener

Hardener Colour			Amber	
Viscosity at: 25°C	IO-10-50 (ISO3219)	mPas	450	950
Density 25°C	IO-10-51 (ASTM D 1475)	g/ml	1,03	1,07

Processing Data

Mixing ratio by weight	for 100 g resin	g	100:19	
Mixing ratio by volume	for 100 ml resin	ml	100:28	
Pot life	25°C (50mm;100ml)	IO-10-53 (*)	min	15 25
Exothermic peak	25°C (50mm;100ml)	IO-10-53 (*)	°C	200 220
Initial mixture viscosity at:	25°C	IO-10-50 (ISO3219)	mPas	14.000 22.000
Gelation time	25°C (1mm)	IO-10-73 (*)	h	2,0 2,5
	40°C (1mm)		min	35 40
Suggested curing cycles		(**)	16hrs at 40°C + 2hrs at 130°C	

MG 536/W 503

TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 16hrs at 40°C + 2hrs at 130°C

Density 25°C		IO-10-54 (ASTM D 792)	g/ml	1,46	1,50
Hardness 25°C		IO-10-58 (ASTM D 2240)	Shore D/15	92	96
Glass transition (Tg)	8hrs at 40°C	IO-10-69 (ASTM D 3418)	°C	52	58
	16hrs at 40°C		°C	68	74
	Recommended cycle		°C	148	154
Maximum Tg		IO-10-69 (ASTM D 3418)	°C	--	160
Linear thermal expansion (Tg -10°C)		IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	52	60
Linear thermal expansion (Tg +10°C)		IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	125	145
Flexural strength		IO-10-66 (ASTM D 790)	MN/m ²	70	80
Strain at break		IO-10-66 (ASTM D 790)	%	1,5	3,0
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m ²	4.000	4.400

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.

MG 536/W 503

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: Prior to demould from the model cure the material at least for 16-12 hrs at 35-40°C. 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.

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.

emission date: June 2014
revision n° 00

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.