

**EN Product Information**

**Elan-tech ®**

PC 38/G 138                      100:75

PC 38/G 138                      100:80

**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](mailto:info.elantas.europe@altana.com)  
[www.elantas.com](http://www.elantas.com)

Resin <b>PC 38</b>	Hardener <b>G 138</b> <b>G 138</b>	Mixing ratio by weight <b>100:75</b> <b>100:80</b>
-----------------------	--	--

**Application:** Aluminium and steel sheet drawing moulds. Foundry patterns, negatives and tools of large size.

**Processing:** Manual mixing or with mixing/dispensing devices. Spiral mixing.  
Solid casting for core models and moulds of the filled system 100:75-80:350-400.  
Surface casting of the pure product on the nuclei properly cured and stabilized.  
Mass casting of the system filled 100:75-80:250-300 for small-medium size models or pilot moulds.  
Long curing time.

**Description:** Two component system. Solvent free. Good abrasion resistant. Machinable. Very good mechanical properties. High dimensional stability. Low shrinkage. The system used in the ratio 100/75 has higher toughness while in the ratio 100/80 the system has higher Tg and elastic modulus.

**SYSTEM SPECIFICATIONS**

**Resin**

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	800	1.300
Pot life	25°C	IO-10-53 (*)	min	15	23

**Hardener G 138**

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

**TYPICAL SYSTEM CHARACTERISTICS**

**Resin**

Resin Colour				White	
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	1,03	1,08

**Hardeners**

Hardener Colour				<b>G 138</b>	<b>G 138</b>
Density at:	25°C	IO-10-51 (ASTM D 1475)	g/ml	1,18 1,20	1,18 1,20

**Processing Data**

Mixing ratio by weight		for 100 g resin	g	100:75	100:80
Mixing ratio by volume		for 100 ml resin	ml	100:67	100:72

Exothermic peak	(50mm;200ml)	IO-10-53 (*)	°C	102 112	102 112
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	180 280	180 280
Gelation time	(15ml;6mm)	IO-10-73 (*)	min	60 90	60 90
Demoulding time	(15ml;6mm)	(*)	h	12 15	12 15

PC 38

TYPICAL CURED SYSTEM PROPERTIES

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

			G 138		G 138	
Colour			Beige		Beige	
			100:75		100:80	
Density	IO-10-54 (ASTM D 792)	g/ml	1,15	1,20	1,15	1,20
Hardness	IO-10-58 (ASTM D 2240)	Shore D/15	75	80	75	80
Glass transition (Tg)	IO-10-69 (ASTM D 3418)	°C	68	73	72	75
Flexural strength	IO-10-66 (ASTM D 790)	MN/m <sup>2</sup>	78	83	88	93
Maximum strain	IO-10-66 (ASTM D 790)	%	4,5	5,5	4,5	5,5
Strain at break	IO-10-66 (ASTM D 790)	%	>	15	12	14
Flexural elastic modulus	IO-10-66 (ASTM D 790)	MN/m <sup>2</sup>	2.700	2.900	3.100	3.300
Tensile strength	IO-10-63 (ASTM D 638)	MN/m <sup>2</sup>	48	53	57	62
Elongation at break	IO-10-63 (ASTM D 638)	%	8	11	4	7

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.

**PC 38**

**Instructions:** Homogenize the resin before use. Casting of the filled system for nuclei: add the appropriate amount of hardener to the resin, mix carefully and add under mixing the filler ALOLT 1 in the indicated ratio. Cast rapidly within the working time of the product. It is possible to prepare mixtures in sequence casting fresh product on fresh product until the nucleus is filled. It is possible to cast thickness up to 50 cm and with a volume of 1 cubic meter and higher, better if equipped with mixing/dispensing machine. Cure and maintain at least 48 hours at room temperature. Drill the holes on the nucleus to create the air escapes and filler holes for the next surface castings. Casting of the pure system: add the appropriate amount of hardener to the resin, mix carefully trying to avoid to incorporate air, cast rapidly, within the working time of the product, in the maximum thickness of 10-15 mm. On higher thickness the pure product gives rise to an exothermic reaction that can generate product expansion, porosity, shrinkage defects in the casting mass. Mass casting of the filled system: for small-medium size models and moulds it is possible to cast directly the filled product making sure not to exceed the 25-30 mm thickness to avoid excessive shrinkages. For the surface preparation (mould or model) refer to the release agents data sheet. For the shimming of the shape it is possible to use calibrated waxes or simple shimming obtained by plastics, cardboard, etc.

**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:** Polyols and the isocyanate based hardeners can be stored for six months in the original sealed containers stored in a cool, dry place. The hardeners may present an increase in viscosity that does not change the cured system properties. Both components are moisture sensitive therefore it is good practice to close the vessels immediately after each use. Moisture absorption may cause the expansion of the product during application and/or the hardener may crystallize during storage.

**Handling precautions:** Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

emission date:	October	2001
revision n° 06	November	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.

PC 38

SYSTEM  
**PC 38/G 138/ALOLT 1**

Mixing ratio by weight  
**100:75-80:350**

**TYPICAL CURED SYSTEM PROPERTIES**

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

Test	Method	Unit	PC 38/G 138/ALOLT 1	
Viscosity	IO-10-50 (EN13702-2)	mPas	6.000	7.000
Exothermic peak 1000ml	IO-10-53 (*)	°C	46	52
Demoulding time	(*)	h	12	15
Density	IO-10-54 (ASTM D 792)	g/ml	1,60	1,64
Compressive strength	IO-10-72 (ASTM D 695)	MN/m <sup>2</sup>	100:75:350	100:80:350
			75 80	77 82