EN

Product Information

Elan-tech®
AS 60/AW 60 100:50

Cartridges kit ADH 60.60
2-components high thermal resistance epoxy structural adhesive

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	Hardener	Mixing ratio by weight
Structural adhesive	**AS 60**	**AW 60**	**100:50**
			Mixing ratio by volume
Cartridges kit	**Cartridges kit ADH**		**100:50**

Application: Structural adhesive for: metals, ceramic materials and plastics.

Processing: Hand application, by brush, by spatula or with mixing/dispensing devices.

Description: Two component epoxy system filled with no-abrasive fillers. Thixotropic. Solvent free. High adhesion on metals. Very good chemical resistance to engine oil, gasoline. acids and bases. High thermal resistance. To obtain the best properties the post-curing up to 120-130°C is advisable. The resin and the hardener have contrasting colours to make easy the control of the mixing.

SYSTEM SPECIFICATIONS

Resin						
Viscosity at:	25°C		IO-10-50 (EN13702-2)	mPas	650.000	950.000
Density at:	25°C		IO-10-51 (ASTM D 1475)	g/ml	1,58	1,62
Hardener						
Viscosity at:	25°C		IO-10-95	mPas	180.000	420.000
Density at:	25°C		IO-10-51 (ASTM D 1475)	g/ml	1,57	1,61
Pot life	25°C	(50mm;200ml)	IO-10-53 (*)	min	35	50

TYPICAL SYSTEM CHARACTERISTICS

Processing Data					
Colour resin					White
Colour hardener					Black
Mixing ratio by weight			for 100 g resin	g	100:50
Mixing ratio by volume			for 100 ml resin	ml	100:50
Initial mixture viscosity at:	25°C		IO-10-50 (EN13702-2)	mPas	400.000	600.000
Gelation time	25°C	(1mm)	IO-10-73 (*)	h	1	2
Setting time	25°C	0,1 mm	(*)	h	4 - 5	

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 15h RT +3h 130°C

Density 25°C	IO-10-54 (ASTM D 792)	g/ml	1,57	1,61
Hardness 25°C	IO-10-58 (ASTM D 2240)	Shore D/15	85	89
Glass transition (Tg)	IO-10-69 (ASTM D 3418)	°C	125	135
Linear thermal expansion (Tg -10°C)	IO-10-71 (ASTM E 831)	10^-6/°C	50	60
Linear thermal expansion (Tg +10°C)	IO-10-71 (ASTM E 831)	10^-6/°C	125	145
Shear strength by tension:				
- Inox steel AISI 316 cured 15h RT+3h 130°C (tested RT)	IO-10-80 (ASTM D 1002)	MPa	15	19
- Inox steel AISI 316 cured 15h RT+3h 130°C (tested 80°C)		MPa	12	16
- Inox steel AISI 316 cured 15h RT+3h 130°C (tested 100°C)		MPa	10	14
- Inox steel AISI 316 cured 15h RT+3h 130°C (tested 120°C)		MPa	7	9
- Inox steel AISI 316 cured 15h RT+3h 130°C (tested 150°C)		MPa	3	4
- Aluminium cured 15h RT+3h 130°C (tested RT)		MPa	14	18
- Aluminium cured 15h RT+3h 130°C (tested 80°C)		MPa	13	17
- Aluminium cured 15h RT+3h 130°C (tested 100°C)		MPa	12	16
- Aluminium cured 15h RT+3h 130°C (tested 120°C)		MPa	9	11
- Aluminium cured 15h RT+3h 130°C (tested 150°C)		MPa	5	6
Flexural strength	IO-10-66 (ASTM D 790)	MN/m²	50	60
Strain at break	IO-10-66 (ASTM D 790)	%	2,0	3,0
Flexural elastic modulus	IO-10-66 (ASTM D 790)	MN/m²	3.000	4.000
Tensile strength	IO-10-63 (ASTM D 638)	MN/m²	27	37
Elongation at break	IO-10-63 (ASTM D 638)	%	1,3	2,3

IO-00-00 = ELANTAS Europe's test method. The corresponding 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: The surfaces must be clean and dry. Generally a mechanical abrasion or sanding followed by degreasing with acetone is sufficient. In pre-pregs assembling no specific preparation is required. Add the appropriate quantity of hardener to the resin, mix carefully. Use slow mixing mixer or mix by hand with a spatula. Apply the adhesive in a uniform thickness of 0.05 ÷ 0.2 mm maintainng a uniform contact pressure on the joint. The indicative amount to apply is 300 grams for square meter. Once applied, the system is moisture and carbonic anhydride sensitive: quickly cover the junction or cure in the oven.

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 up to 120-130°C increasing gradually 10°C/hour. Cool it down slowly. Users should evaluate the best conditions of curing or post-curing depending on the component size and shape.

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.

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