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Product Information

Elan-tech®
AS 46/AW 46 100:80

Cartridges kit ADH 46.46
Slow curing epoxy adhesive. Excellent Peeling resistance

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ELANTAS

	Resin	Hardener	Mixing ratio by weight
Structural adhesive	**AS 46**	**AW 46**	**100:80**
			Mixing ratio by volume
Cartridges kit	**ADH 46.46**		**100:100**

Application: Adhesive for heterogenous materials: wood, composite materials, glass, ceramic and plastics.

Processing: Application by brush, by spatula or with mixing/dispensing devices. Room temperature or hot curing.

Description: Two components epoxy system with excellent Peeling resistance. Slightly thixotropic. Solvent free. The system produces bonding resilient. 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.

SYSTEM SPECIFICATIONS

Resin					
Viscosity at:	25°C	IO-10-50 (ISO3219)	mPas	38.000	50.000
Hardener					
Viscosity at:	25°C	IO-10-50 (ISO3219)	mPas	14.000	24.000

TYPICAL SYSTEM CHARACTERISTICS

Processing Data					
Colour resin				Milky	
Colour hardener				Amber	
Mixing ratio by weight		for 100 g resin	g	100:80	
Mixing ratio by volume		for 100 ml resin	ml	100:100	
Density	25°C Resin	IO-10-51 (ASTM D 1475)	g/ml	1,14	1,18
Density	25°C Hardener	IO-10-51 (ASTM D 1475)	g/ml	0,95	0,99
Pot life	25°C (50mm;200ml)	IO-10-53 (*)	min	40	60
Exothermic peak	25°C (50mm;200ml)	IO-10-53 (*)	°C	105	125
Initial mixture viscosity at:	25°C	IO-10-50 (ISO3219)	mPas	20.000	32.000
Gelation time	25°C (1mm)	IO-10-88 (ASTM D5895-03)	h	5	6
Setting time	25°C 0,1 mm	(*)	h	6 - 8	
Suggested curing cycles		(**)		3hrs at 50°C	

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 3hrs at 50°C

Colour				Amber	
Density 25°C		IO-10-54 (ASTM D 792)	g/ml	1,10	1,14
Glass transition (Tg)	24h RT	IO-10-69 (ASTM D 3418)	°C	48	54
	16h 40°C		°C	51	57
	3h 50°C		°C	54	60
Shear strength by tension:					
- Aluminium cured 16h 40°C (tested RT)		IO-10-80 (ASTM D 1002)	MPa	20	25
- Inox steel AISI 316 cured 16h 40°C (tested RT)			MPa	21	26
- PVC cured 3h 50°C (tested RT)			MPa	6,5	7,5
- PCcured 3h 50°C (tested RT)			MPa	3,5	4,5
- PMMA cured 3h 50°C (tested RT)			MPa	3,5	4,0
- POM cured 3h 50°C (tested RT)			MPa	2,5	3,0
- Inox steel AISI 316 cured 24h 20°C (tested RT)			MPa	15	28
- Inox steel AISI 316 cured 7 days 20°C (tested RT)			MPa	21	26
- Inox steel AISI 316 cured 16h 40°C tested at RT after 96 h (salt spray)			MPa	23,5	28,5
Flexural strength		IO-10-66 (ASTM D 790)	MN/m²	56	64
Maximum strain		IO-10-66 (ASTM D 790)	%	4,5	6,5
Strain at break		IO-10-66 (ASTM D 790)	%		>15
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m²	1.600	2.000
Tensile strength		IO-10-63 (ASTM D 638)	MN/m²	36	44
Elongation at break		IO-10-63 (ASTM D 638)	%	4	6
Peeling strength:					
- Aluminium cured 3h 50°C (tested RT)		ASTM D 1876	N/cm	48	58

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: Prepare the surfaces to be bonded by removing moisture, dust, dirt and loose parts. For metals is normally enough a mechanical abrasion or sand blasting followed by degreasing with acetone. When gluing composite parts it is not required any specific surface treating other cleaning with acetone. In case of plastic substrate it is important to check its solvent resistance before cleaning. Generally is suggested a light sanding followed by cleaning with alcohol. Plasma or corona treatment will improve adhesion and consequently bonding strength: it's recommended in case of specific needs. Add the appropriate amount of hardener into the resin and mix carefully using a slow speed stirrer or by hand with a spatula. Apply the adhesive in a homogeneous thickness maintaining a uniform contact pressure on the joint. Before setting , the adhesive is moisture and carbon dioxide: once applied cover the joined parts as soon as possible or, better, hot cure if possible. Further general information are available in the brochure "Elan-tech Adhesive & Sealants".

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.

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 container 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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