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Product Information

Elan-tech®

AS 95.1/AW 95.1

100:45

ADH 951.951

Fast epoxyacrylate adhesive

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Structural adhesive	Resin AS 95.1	Hardener AW 95.1	Mixing ratio by weight 100:45
Cartridges kit	ADH 951.951		Mixing ratio by volume 100:50

Application: Structural adhesive for assembly of transparent heterogenous materials. Rapid fixing of bushings for sanitaryware.

Processing: Spatula application or with mixing/dispensing devices. Apply within a short time. Room temperature curing. Final properties and maximum resistances are achieved with full curing, after 24 hours. Good bonding is however achieved after 4 hours; the final part can be handled after 30 minutes. If the curing is carried on at high temperature, good performance is obtained with bonding at 50°C for 3 hours. Available also in cartridges.

Description: Two components unfilled epoxy system, solvent free, fast and tough. Excellent resistance to bases, good to diluted acids, poor to solvents. 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			Opalescent
Viscosity 25°C	IO-10-50 (ISO3219)	mPas	5.000 9.000
Density 25°C	IO-10-51 (ASTM D 1475)	g/ml	1,15 1,19

Hardener

Hardener Colour			Amber
Viscosity at: 25°C	IO-10-50 (ISO3219)	mPas	1.000 2.000
Density 25°C	IO-10-51 (ASTM D 1475)	g/ml	0,97 1,01

Processing Data

Mixing ratio by weight	for 100 g resin	g	100:45
Mixing ratio by volume	for 100 ml resin	ml	100:50

Pot life	25°C 100 g	IO-10-73 (*)	min	2 3
Initial mixture viscosity at:	25°C	IO-10-50 (ISO3219)		tix
Gelation time	25°C (1mm)	IO-10-88 (ASTM D5895-03)	min	3,5 5,5
Setting time	25°C 0,1 mm	(*)	min	17-22
Suggested curing cycles		(**)		a) >24h RT b) 16h 40°C c) 3h 80°C

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 24h at RT + 15h 60°C unless otherwise indicated

Colour			Pale yellow	
Density 25°C (cycle a)	IO-10-54 (ASTM D 792)	g/ml	1,15	1,19
Hardness 25°C	IO-10-58 (ASTM D 2240)	Shore D/15	80	85
Glass transition (Tg) 24 h RT	IO-10-69 (ASTM D 3418)	°C	45	52
24 h RT + 15 h 60°C		°C	76	82
3 h 50°C		°C	47	53
16 h 40°C		°C	55	62
3 h 80°C		°C	82	88
Working temperature range (LSS > 3 MPa)	IO-10-80 (ASTM D 1002)	°C	-40	110
Minimum curing temperature at 25°C for LSS > 50%	IO-10-80 (ASTM D 1002)	h		12
Linear thermal expansion (Tg -10°C)	IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	60	70
Linear thermal expansion (Tg +10°C)	IO-10-71 (ASTM E 831)	10 ⁻⁶ /°C	185	195
Max recommended operating temperature	(***)	°C	75	
Shear strength by tension:				
- Inox steel AISI 316 cured 4 h at RT (tested RT)	IO-10-80 (ASTM D 1002)	MPa	2,5	3,5
- Inox steel AISI 316 cured 24 h at RT (tested RT)		MPa	15,5	18,5
- Inox steel AISI 316 cured 3 h at 80°C (tested RT)		MPa	22	26
- Aluminium cured 4 h at RT (tested RT)		MPa	1,5	2,5
- Aluminium cured 24 h at RT (tested RT)		MPa	14	17
- Aluminium cured 3 h at 80°C (tested RT)		MPa	16	20
- PVC cured 3 h at 50°C (tested RT)		MPa	3	4
- ABS cured 3 h at 50°C (tested RT)		MPa	1,8	2,8
- PC cured 3 h at 50°C (tested RT)		MPa	2	3
Flexural strength	IO-10-66 (ASTM D 790)	MN/m ²	80	90
Strain at break	IO-10-66 (ASTM D 790)	%	5	6
Flexural elastic modulus	IO-10-66 (ASTM D 790)	MN/m ²	2.200	2.700
Tensile strength	IO-10-63 (ASTM D 638)	MN/m ²	54	64
Elongation at break	IO-10-63 (ASTM D 638)	%	4	6

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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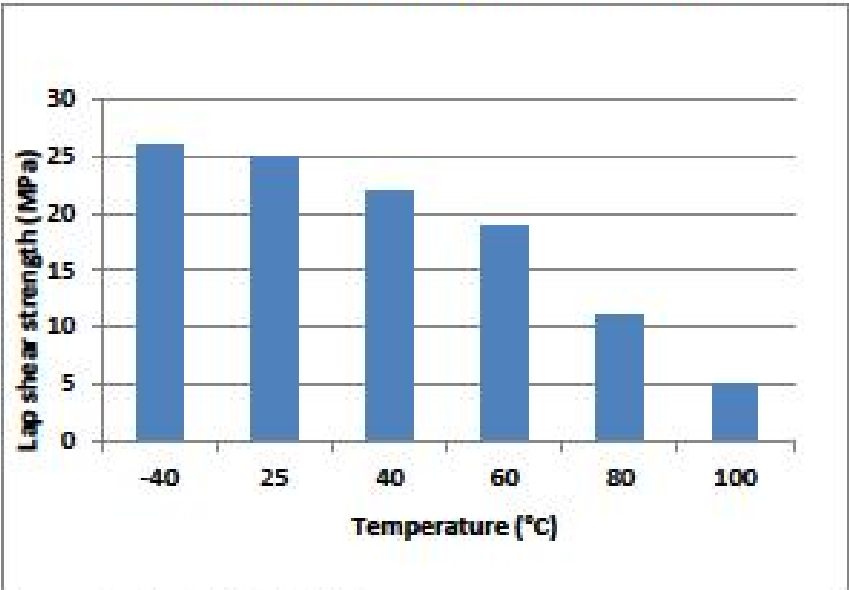
Instructions:	The surfaces must be clean and dry. Generally a mechanical abrasion or sanding followed by degreasing with solvent (ex. acetone) is sufficient. In pre-pregs assembling no specific preparation is required. Add the appropriate quantity of hardener to the resin, mix carefully. Application by spatula. Once applied, the system is moisture and carbon dioxide sensitive then bond quickly. The final cleaning of the equipment can be carried out with normal solvent such as acetone, nitro, 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.
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. Suggested conditions for storage are between 10° C and 30°C, preferably between 15°C and 25°C. If it is stored at a lower temperature, before use raise the temperature's product at 25°C (minimum).
Handling precautions:	Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

emission date: November 2015
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.

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**Dependence from temperature of the
Lap shear strength (ASTM D 1002)**



Support = Sanded AISI 316
Curing cycle = 3 hours at 80°C