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Product Information

Elan-tech®
AS 97.1/AW 96.1 100:100

ADH 971.961
Epoxy acrylate medium-fast adhesive. Good resistance to peeling

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	Resin	Hardener	Mixing ratio by weight
Structural adhesive	**AS 97.1**	**AW 96.1**	**100:100**
			Mixing ratio by volume
Cartridges kit		**ADH 971.961**	**100:100**

Application: Adhesive for medium-fast assembly of composite materials, metals, automotive components, sport components and heterogenous materials.

Processing: Spatula application or with mixing/dispensing devices. Apply within a short time. Room temperature or moderate temperature curing. Good resistance are achieved with room temperature curing after 24 hours. The best performances are obtained with bonding at 40°C for 16 hours. The final part can be handled after 90 minutes. Available also in cartridges.

Description: Two components filled epoxy system. Solvent free. Medium reactivity. After mixing of two components it is obtained a thixotropic system with excellent sag resistance. 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			Black	
Viscosity 25°C	IO-10-50 (ISO3219)	mPas	100.000	150.000
Density 25°C	IO-10-51 (ASTM D 1475)	g/ml	1,38	1,42
Hardener				
Hardener Colour			White	
Viscosity at: 25°C	IO-10-50 (ISO3219)	mPas	60.000	100.000
Density 25°C	IO-10-51 (ASTM D 1475)	g/ml	1,35	1,39
Processing Data				
Mixing ratio by weight	for 100 g resin	g	100:100	
Mixing ratio by volume	for 100 ml resin	ml	100:100	
Pot life 25°C 100g	IO-10-73 (*)	min	10	15
Initial mixture viscosity at: 25°C	IO-10-50 (ISO3219)			tix
Gelation time 25°C (1mm)	IO-10-88 (ASTM D5895-03)	min	45	60
Setting time 25°C 0,1 mm	(*)	min	90	
Suggested curing cycles	(**)		a) >24h RT b) 16h 40°C c) 5h 70°C	

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: according to the cycles reported

Colour				Grey	
Density 25°C (cycle b)		IO-10-54 (ASTM D 792)	g/ml	1,37	1,41
Hardness 25°C (cycle b)		IO-10-58 (ASTM D 2240)	Shore D/15	85	89
Glass transition (Tg)	24h RT	IO-10-69 (ASTM D 3418)	°C	47	53
	16h 40°C		°C	52	58
	5h 70°C		°C	66	72
Working temperature range (LSS > 3 MPa)		IO-10-80 (ASTM D 1002)	°C	-40	+110
Max recommended operating temperature		(***)	°C	65	
Shear strength by tension:					
- Aluminium cured 2,5h RT (tested RT)		IO-10-80 (ASTM D 1002)	MPa		>1
- Aluminium cured 24h RT (tested RT)			MPa	15,5	18,5
- Aluminium cured 16h 40°C (tested RT)			MPa	18,0	22,0
- Inox steel AISI 316 cured 24h RT (tested RT)			MPa	16,5	20,0
- Inox steel AISI 316 cured 16h 40°C (tested RT)			MPa	23,0	27,0
- ABS cured 16h 40°C (tested RT)			MPa	5,0	6,0
- PC cured 16h 40°C (tested RT)			MPa	3,0	4,0
- PVC cured 16h 40°C (tested RT)			MPa	5,5	6,5
Peeling strength					
- Aluminium cured 16h at 40°C (tested RT)		ASTM D 1876	N/cm	18,0	23,0

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 sensible 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.

Storage: Epoxy resins and their hardeners can be stored for two years in the original sealed containers stored in a cool, dry place.

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

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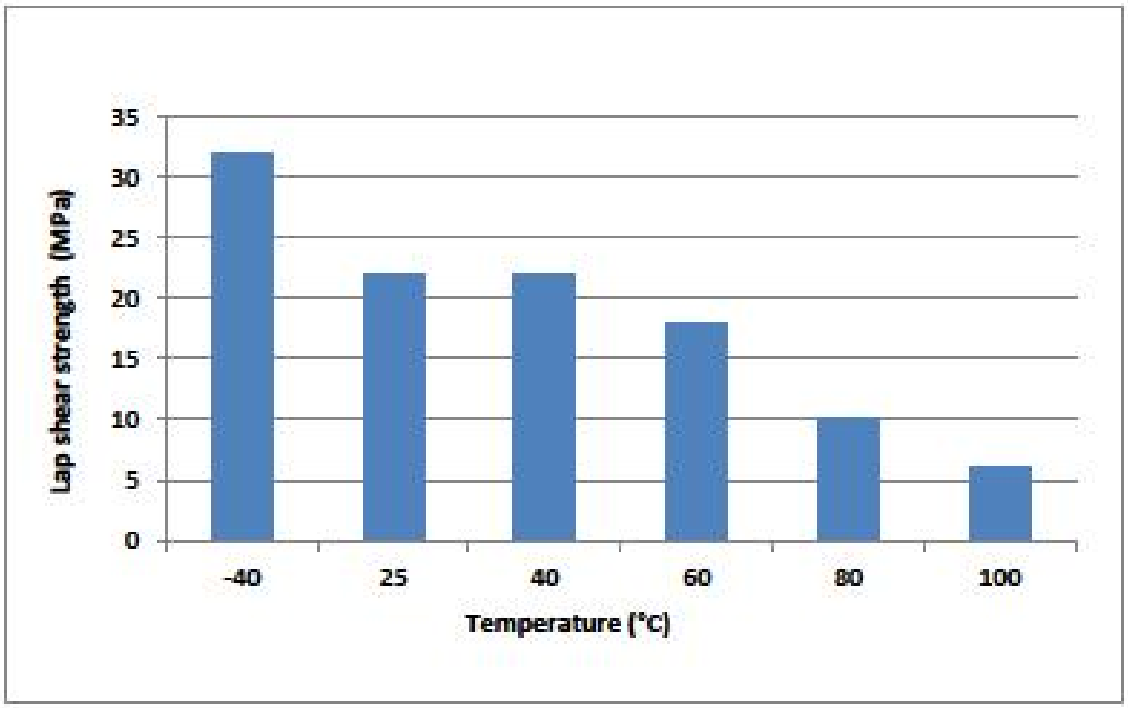
Dependence from temperature of the Lap shear strength (ASTM D 1002)



Support = Sanded AISI 316
Curing cycle = 5 hours 70°C