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Preliminary Technical Data Sheet

**Elan-tech®**

**AS 74 BIO/AW 74 BIO**

100:45

Epoxy Adhesive

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## Product description

- User friendly with Bio based raw materials
- Easy application with cartridges ADH 74.74 BIO
- Available in dark grey or red
- Very good ageing resistance
- Excellent peeling resistance
- Good temperature resistance

## Areas of application

Carbon composite, hybrid joints with different materials like metal inserts and epoxy composite parts, in automotive, sport items, other.

## Processing methods

Application by hand, cartridge or dispensing machine. Convenient mix ratio 2:1. To be applied on dry and clean substrate. Curing at room temperature or directly at 60-80 °C. Pretreatment of the surface might further improve the adhesion result.

## Curing/Post-curing

Post-curing is always advisable for Room Temperature 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 and stability

Epoxy resin and its amine based hardener 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.

## Typical product properties

### AS 74 BIO

Properties	Conditions	Test Method	Value	M/U
Colour		--	Neutral	
Viscosity	25 °C	IO-10-95 (ISO 3219)	60000 ÷ 90000	mPa·s
Density	25 °C	IO-10-51 (ASTM D 1475)	1,13 ÷ 1,19	g/ml

### AW 74 BIO

Properties	Conditions	Test Method	Value	M/U
Colour		--	Black	
Viscosity	25 °C	IO-10-95 (ISO 3219)	60000 ÷ 90000	mPa·s
Density	25 °C	IO-10-51 (ASTM D 1475)	0,98 ÷ 1,02	g/ml

## Typical system properties

Properties	Conditions	Test Method	Value	M/U
Mix Ratio by weight		--	100 : 45	g
Mix Ratio by volume		--	100 : 50	ml
Initial mixture viscosity	25 °C	IO-10-95 (ISO 3219)	65000 ÷ 100000	mPa·s
Exothermic peak	25 °C - 40 mm - 100 ml	IO-10-53 (*)	105 ÷ 115	°C
Pot life	25 °C - 40 mm - 100 ml	IO-10-53 (*)	33 ÷ 43	min
Gel time	25 °C - 1 mm	IO-10-88 (ASTM D 5895-03)	4,5 ÷ 5,5	hrs
Setting time	25 °C - 0,1 mm	220-542-085 (ASTM D 1144)	4,5 ÷ 5,5	hrs
Suggested curing cycle		(**)	2 h 80 °C	

## Typical cured system properties

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle		--	2 h 80 °C	
Colour		--	Black	
Glass Transition (Tg)	24 h RT	IO-10-69 (ASTM D 3418)	40 ÷ 45	°C
	24 h RT + 15 h 60 °C		80 ÷ 86	°C
	24 h RT + 8 h 80 °C		91 ÷ 97	°C
	24 h RT + 3 h 120 °C		81 ÷ 87	°C
	2 h 80 °C		83 ÷ 89	°C
	5 h 70 °C		80 ÷ 85	°C
Maximum Tg	24 h RT + 8 h 80 °C	IO-10-69 (ASTM D 3418)	91 ÷ 97	°C
Water absorption (24 h RT)		IO-10-70 (ASTM D 570)	0,25 ÷ 0,35	%
Water absorption (2 h 100 °C)		IO-10-70 (ASTM D 570)	0,11 ÷ 0,15	%
Linear thermal exp. (Tg -10 °C)		IO-10-71 (ASTM E 831)	103 ÷ 113	ppm/°C
Linear thermal exp. (Tg +10 °C)		IO-10-71 (ASTM E 831)	210 ÷ 220	ppm/°C

## Typical mechanical properties in cured condition

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle		--	2 h 80 °C	
Strain at maximum stress	25 °C	IO-10-66 (ASTM D 790)	n.a.	%
Strain at break	25 °C	IO-10-66 (ASTM D 790)	n.a.	%
Flexural elastic modulus	25 °C	IO-10-66 (ASTM D 790)	n.a.	MN/m <sup>2</sup>
Tensile strength	25 °C	IO-10-63 (ASTM D 638)	n.a.	MN/m <sup>2</sup>
Tensile elastic modulus	25 °C	IO-10-63 (ASTM D 638)	n.a.	MN/m <sup>2</sup>
Compressive strength	25 °C	IO-10-72 (ASTM D 695)	n.a.	MN/m <sup>2</sup>
Lap Shear Strength (LSS)	Aluminum - 2 h 80 °C	IO-10-80 (ASTM D 1002)	25 ÷ 30	MPa

IO-00-00/200-000-000 = Elantas Europe internal 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 based on 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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