Distributeur : JBG-METAFIX

EN

Technical Data Sheet

Bectron®

PB 4540/PH 4940

100:10

Polyurethane Adhesive
Self-extinguishing

ELANTAS Europe Sales offices:

Collecchio (PR) 43044 - Italy
Strada Antolini n° 1 loc. Lemignano
Tel +39 0521 304777 Fax +39 0521 804410

Hamburg 20539 - Germany
Großmannstrasse. 105
Tel +49 40 78946 0 Fax +49 40 78946 349

Quattordio (AL) 15028 - Italy
Via San Martino, 6
Tel +39 0131 773870 Fax +39 0131 773875

info.elantas.europe@altana.com
www.elantas.com/europe

Product description

- Two components elastomeric filled system
- Self-extinguishing
- Very good electrical properties
- Good thermal resistance
- Low water absorption and moisture transmission
- Good adhesion to glass, ceramics, plastic materials and metals
- Good resistance to oils, greases and diesel fuel
- The cured system is flexible and maintains its flexibility also at very low temperature
- The system is UL 94 V-0 listed (File E116643)

Areas of application

Encapsulation of: electrical and electronic components and PCBs, components particularly sensitive to thermo-mechanical stress. The high chemical resistance will give protection from humid, alkaline and acidic environments. Sealings.

Processing methods

- Manual and/or automatic casting/potting
- Under vacuum casting/potting
- Room temperature curing

In pre-filled products, before each use, always check for presence of possible sediment. In case, re-homogenize thoroughly. Add the appropriate quantity of hardener to the resin and mix carefully. Avoid excessive air trapping when mixing components. It can be useful to pre-heat components and remove entrapped air from the mixture with a vacuum step before casting.

Curing/Post-curing

For a room temperature curing system, post-curing allows fast stabilization of the material and attainment of the best electrical and mechanical properties. During curing process it is advisable to avoid thermal variations higher than 10 °C/hour.

Storage and stability

Refer to the safety data sheet regarding conditions for safe storage. Polyol and the isocyanate based hardener must be stored in the original sealed containers stored in a cool, dry place. The resin and hardener are chemically stable. Avoid storage outside. The hardener may increase its viscosity over storage time without changing final cured system properties. Long storage may cause filler settling. Mix each component before use. Both components are moisture sensitive therefore it is good practice to close the vessels immediately after each use. Moisture absorption may cause the expansion of the product during application and/or may cause the hardener to form solid residues. Hardener can crystallize if exposed at low temperatures. To restore the original conditions, heat the material at 70-80 °C avoiding local overheating. Before use, the product must be homogenized and cooled down at room temperature.

Handling precautions

Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

Sales specifications

PB 4540

Properties	Conditions	Test Method	Value	M/U
Viscosity	25 °C	IO-10-50 (ISO 3219)	5000 ÷ 7500	mPa·s
Density	25 °C	IO-10-51 (ASTM D 1475)	1,42 ÷ 1,46	g/ml
Gel time	25 °C - 100 ml	IO-10-52a	10 ÷ 15	min

PH 4940

Properties	Conditions	Test Method	Value	M/U
Viscosity	25 °C	IO-10-50 (ISO 3219)	80 ÷ 160	mPa·s

Typical product properties

PB 4540

Properties	Conditions	Test Method	Value	M/U
Colour		--	Neutral/Black	

PH 4940

Properties	Conditions	Test Method	Value	M/U
Colour		--	Amber	
Density	25 °C	IO-10-51 (ASTM D 1475)	1,08 ÷ 1,11	g/ml

Typical system properties

Properties	Conditions	Test Method	Value	M/U
Mix Ratio by weight		--	100 : 10	g
Mix Ratio by volume		--	100 : 14	ml
Initial mixture viscosity	25 °C	IO-10-50 (ISO 3219)	2400 ÷ 3400	mPa·s
Pot life	25 °C - 25000 mPa·s	IO-10-50 (ISO 3219)	7 ÷ 9	min
Gel time (manual test)	25 °C - 15 ml - 6 mm	IO-10-73 (*)	40 ÷ 50	min
	60 °C - 15 ml - 6 mm		13 ÷ 17	min
Demoulding time	25 °C - 15 ml - 6 mm	(*)	80 ÷ 100	min
	60 °C - 15 ml - 6 mm		22 ÷ 28	min
Post-curing	60 °C	(**)	15	hrs
Suggested curing cycles		(**)	24 h RT + 15 h 60 °C	

Typical cured system properties

Properties	Conditions	Test Method	Value	M/U
Density (solid)	25 °C	IO-10-54 (ASTM D 792)	1,39 ÷ 1,43	g/ml
Hardness	25 °C	IO-10-58 (ASTM D 2240)	40 ÷ 45	Shore A/15
	-20 °C		42 ÷ 46	Shore A/15
	-40 °C		45 ÷ 50	Shore A/15
Glass Transition (Tg)		IO-10-69 (ASTM D 3418)	-50	°C
Water absorption (24 h RT)		IO-10-70 (ASTM D 570)	0,10 ÷ 0,15	%
Linear thermal exp. (Tg +10 °C)		IO-10-71 (ASTM E 831)	190 ÷ 220	ppm/°C
Flammability		IO-10-68 (UL 94 V-0)	5,5	mm
Thermal conductivity	25 °C	IO-10-87 (ASTM C 518)	0,45 ÷ 0,55	W/(m·K)
Operating Temperature Range		--	-40/120	°C

Typical mechanical properties in cured condition

Properties	Conditions	Test Method	Value	M/U
Nominal strain at break	25 °C	IO-10-63 (ASTM D 638)	65 ÷ 95	%

Typical dielectric properties in cured condition

Properties	Conditions	Test Method	Value	M/U
Dielectric constant	25 °C	IO-10-59 (ASTM D 150)	3,5 ÷ 5,0	
Volume resistivity	25 °C	IO-10-60 (ASTM D 257)	1×10^{12} ÷ 1×10^{13}	Ω·cm
Dielectric strength	25 °C - 2 mm	IO-10-61 (ASTM D 149)	19 ÷ 21	kV/mm

Specimens curing cycle = 24 h RT + 15 h 60 °C

IO-00-00 = 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/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.