

Product Information

Electronic Protection System

Thick Film Coating, moisture cure

Bectron[®] PT 4810 N VP

ELANTAS Beck GmbH
Grossmannstr. 105
20539 Hamburg
Germany
Tel +49 40 78946 0
Fax +49 40 78946 276
bectron.elantas.beck@altana.com
www.elantas.com

Product description

Bectron[®] PT 4810 N VP is a 1-component polyurethane with moderate viscosity which cures by reaction with moisture in the atmosphere to form a flexible material suitable for sealing and protection of components and connections on the PCB. It offers excellent flexibility at very low temperature.

Bectron[®] PT 4810 N VP and satisfies the requirements of ROHS.

Areas of application

Bectron[®] PT 4810 N VP is used for chemical protection of PCBs against moisture and contamination and for securing large components on the board against mechanical shock and vibration. It has viscosity suitable for thick film coating of large areas selectively on individual components contacts or sealing open connections on the PCB. The applied material will remain in place during curing with no stress on delicate components protected.

The cured product is soft and flexible and will not damage sensitive components under thermal shock, including very low temperatures to -50°C.

Properties of the cured material

Good electrical properties even after water immersion.

Rapid curing

Good adhesion on many substrates

Low shrinkage on curing

Low temperature flexibility -50°C

Resistant to moisture and migration

Resistant to organic and inorganic solvents

Low solvent content

Storage

Bectron[®] PT 4810 N VP is supplied in sealed containers which should be stored for 3 months between 5 and 10 °C. Freezing at -18°C will give long shelf life without risk to the material.

Processing suggestions

Bectron[®] PT 4810 N VP should be applied directly from the cartridge with a suitable nozzle. The cartridges should be allowed to reach room temperature for 4 hours before use to allow the viscosity to reach the specified level. If the Bectron[®] PT 4810 N VP is transferred to a second cartridge or applicator it must be used in a short time as exposure to moisture will start the curing reaction. Excessive exposure to moisture will cause increase in viscosity and prevent controlled application.

The viscosity is moderate for coating suited to dispensing or other application for general coverage of a PCB or component.

Bectron[®] PT 4810 N VP will then cure at room temperature without further action

Curing at room temperature requires 5 to 6 hours. Increased temperature and humidity can reduce the curing time. Heating in a conventional oven at low humidity will have little effect on curing time.

To ensure satisfactory adhesion on the PCB surface the following should be checked:

- Use of residue-free flux
- ensure dry surfaces
- Check compatibility of the coating resin with the solder resist and solder paste.

Table 1 - Properties of materials as supplied
PT 4810 N VP

Property	Conditions	Value	Unit
Colour		blue	
Viscosity D=40,8 1/s DIN 53019	23°C	4,500 ± 1,200	mPa.s
Density DIN EN ISO 2811-1	23°C	0.99 ± 0.02	g/cm ³
Shelf Life	<10 °C	3	months

Table 2 – Thermal Properties of cured compound

Property	Conditions	Value	Unit
Temperature Range		-50 to +100	°C

Table 3 - Mechanical properties of cured compound

Property	Conditions	Value	Unit
Hardness ISO 868	23°C	45 ± 10	Shore A
Elongation to fracture DIN 53455	23°C		%

Table 4 - Dielectric properties of cured compound

Property	Conditions	Value	Unit
Volume resistivity ρD IEC 60464 Part 2	23°C	6.0 x 10 ¹²	Ω • cm
Surface Resistivity R ₀ VDE 0303 Part 3	23°C	5.0 x 10 ¹²	Ω
Relative Permittivity IEC 60250	23°C	3.5	
Dissipation Factor tan δ IEC 60250	23°C	0.03	
Dielectric Strength IEC 60464 Part 2	23°C	>20	kV/mm

Table 5 – Chemical Properties of cured compound

Property	Conditions	Value	Unit
Water Absorption ISO 62 Method 1		0.1	%

The Our advice in application technology given verbally, in writing and by testing corresponds to the best of our knowledge and belief, but is intended as information given without obligo, also with respect to any protective rights held by third parties. It does not relieve you from your own responsibility to check the products for their suitability to the purposes and processes intended. The application, usage and processing of the products are beyond our reasonable control and will completely fall into your scope of responsibility. Should there nevertheless be a case of liability from our side, this will be limited to the value of the merchandise delivered by us. Naturally, we assume responsibility for the unobjectionable quality of our products, as defined in our General Terms and Conditions