ELANTAS
Electrical Insulation

Product Information

Electronic Protection System

Thick Film Coating, moisture cure

Bectron® PT 4832

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

A member of ALTANA

Product description

Bectron® PT 4832 is a 1-component thixotropic polyurethane which cures rapidly by reaction with moisture in the atmosphere to form a soft flexible material suitable for sealing and protection of components and connections on the PCB.

Areas of application

Bectron® PT 4832 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 high viscosity thixotropic flow properties suitable to apply on individual components contacts or sealing open connections on the PCB. With the correct nozzle diameter a thin line of Bectron® PT 4832 can cover a row of connecting pins or other small components with no need for masking or covers
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 low temperatures.

Properties of the cured material

Good electrical properties even after water immersion.
Good adhesion on many substrates
Low shrinkage on curing
Withstands low temperature (-45°C)
Resistant to moisture and migration
Resistant to organic and inorganic solvents
Low solvent content
Satisfies ROHS Directive

Storage

Bectron® PT 4832 is supplied in sealed cartridges which can be stored for 16 weeks between 5 and 10 °C. Freezing at -18°C will give long shelf life without risk to the material.

Processing suggestions

Bectron® PT 4832 should be applied directly from the cartridge with a suitable nozzle. If the Bectron® PT 4832 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 cartridges should be allowed to reach Room Temperature for 4 hours before use to allow the viscosity to reach the specified level. At room temperature the thixotropic properties allow accurate application to small areas. Bectron® PT 4832 will then cure at room temperature without further action.

Curing at room temperature at ≥ 50 % relative humidity requires 5 to 6 hours to a stable material. Complete curing requires a minimum of 24 hours. Increased temperature and humidity can reduce the curing time.
Heating in a conventional oven with low humidity is not suitable for curing.

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 4832

Property	Condition	Value	Unit
Colour		Blue transparent	
Viscosity DIN 53019	23°C, D=3 s^{-1}	50,000 ± 10,000	mPa.s
Specific gravity DIN EN ISO 2811-1	23°C	1.12 ± 0.05	g/cm^3
Shelf Life	5 -10 °C	16	weeks

Table 2 – Thermal Properties of cured compound

Property	Condition	Value	Unit
Temperature Range		-45 to +100	°C

Table 3 - Mechanical properties of cured compound

Property	Condition	Value	Unit
Specific Gravity DIN 16945	23°C	1.12 ± 0.05	g/cm^3
Hardness ISO 868	23°C	45 ± 10	Shore A
Elongation to fracture DIN 53455	23°C	350	%

Table 4 - Dielectric properties of cured compound

Property	Condition	Value	Unit
Volume resistivity ρD IEC 60464 Part 2	23°C	2.0 x 10^{13}	Ω • cm
After 7 days water immersion	23°C	1.0 x 10^{13}	Ω • cm
Surface Resistivity R_0 VDE 0303 Part 3	23°C	6.5 x10^{10}	Ω
After 7 days water immersion	23°C	1.0 x10^{10}	Ω

Table 5 – Chemical Properties of cured compound

Property	Condition	Value	Unit
Water Absorption ISO 62 Methode 1	24h 23°C	1.2	%

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 any damage 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