ELANTAS
Electrical Insulation

Product Information

Electronic Protection System

Thick Film Coating, moisture cure

Bectron® PT 4834

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Product description

Bectron® PT 4834 is a 1-component 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 4834 is used for chemical protection of PCBs against moisture and contamination and 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 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
Resistant to low temperature (-45°C)
Resistant to moisture and migration
Resistant to organic and inorganic solvents
Low solvent content
Satisfies ROHS Directive

Storage

Bectron® PT 4834 is supplied in sealed cartridges which can be stored for up to 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 4834 should be applied directly from the cartridge with a suitable nozzle. If the PT 4834 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 4834 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. Any residual moisture or alcohol under the Bertron® PT 4834 will cause bubbles and unreliable curing

- 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 4834

Property	Condition	Value	Unit
Colour		Blue transparent	
Viscosity DIN 53019	23°C; D=22,4 s^{-1}	3,200 ± 800	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
Tracking resistance, IEC 60112		600	CTI

Table 5 – Chemical Properties of cured compound

Property	Condition	Value	Unit
Water Absorption ISO 62 Methode 1	24h 23°C	1.4 ± 0.1	%

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