ELANTAS
Electrical Insulation

Product Information

Electronic Protection System

Polybutadiene Potting/Encapsulation Resin

Bectron® PB 3201

Hardener Bectron PH 4918

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Product description

Bectron® PB 3201 with Hardener Bectron® PH 4918 is a 2 component system which will produce a flexible compound suitable for potting and casting. It is based on polybutadiene and provides good flexibility at low temperature and superior resistance properties. It is resistant to organic and inorganic solvents with good adhesion. It cures with low shrinkage and good adhesion to most substrates. It is solvent free and does not damage components on the board

Areas of application

Bectron® PB 3201 is suitable for many potting applications needing stability to thermal shock. It is ideal for casting whole PCB to give where good protection against humidity aggressive chemicals shock and vibration are required.

Properties of the cured material

The cured material has high elasticity with flexibility and strength at low temperatures.
Good electrical properties
Low glass transition temperature Tg (-63°C)

Satisfies the requirements of ROHS

Storage

Bectron® PB 3201 should be kept in closed containers at normal temperatures.
Hardener Bectron® PH 4918 is moisture sensitive and containers must be well sealed and stored below +40°C. Opened containers should be resealed as soon as possible. If stored in cool conditions some solidification may occur. This can be corrected by heating the sealed drum to +50 to 60°C for 48 hours.

Processing suggestions

Bectron® PB 3201/Hardener Bectron® PH 4918 is a moderate viscosity system which can be applied in a continuous process with conventional mixing and dispensing equipment.
For manual batch application thorough mixing of the 2 components is essential and care is needed to avoid air bubbles. Pot life is about 25 minutes. .

Recommended curing should be above 20°C

- At Room Temperature 48 hours
- At 60°C 120 minutes with some days for full 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

Property	PB 3201	PH 4918	Units
Colour	White, Milky	Light yellow	
Viscosity, 23°C, 7.3 s^{-1}, DIN 53019	4500 ± 1500	1200 ± 300	mPa.s
Density, 20°C, DIN EN ISO 2811-1	0.91 ± 0.05	1.16 ±0.05	g/cm^3
Shelf Life	6	6	months

Table 2 - Properties of mixture

Mixing Ratio Bectron® PB 3201 : Hardener Bectron® PH 4918	weight	100 : 58	Parts
Viscosity DIN 53019	D=7 s^{-1}, 23°C	7500 ± 2000	mPa.s
Process time	25°C	30	min

Table 3 – Thermal Properties of cured compound

Property	Condition	Value	Units
Operating Temperature range		-60 to +150	°C
Glass transition temperature		-63	°C
Coefficient of Thermal Expansion (Beck M56)		17 X 10^{-5}	K^{-1}

Table 4 - Mechanical properties of cured compound

Property	Condition	Value	Units
Density DIN 52317	20°C	0.98 ± 0.05	g/cm^3
Hardness DIN 53505	16 hrs @ 80°C	70 ± 10	Shore A

Table 5 – Dielectric properties of cured compound

Property	Condition	Value	Units
Volume resistivity VDE 0303 Part 2 After 7 days water immersion	23 °C	1.9 x 10^{14} 7.4 x10^{13}	Ω • cm
Surface Resistivity VDE 0303 Part 3 After 7 days water immersion	23°C		Ω
Dielectric Strength VDE 0303 Part 2	23°C	>30	KV/mm
Dielectric loss factor, tan δ, IEC 60250	1 KHz, 23°C		
Relative Permittivity IEC 60250	1 KHz, 23°C		
Tracking Resistance IEC 60112			CTI

Table 6 - Chemical properties of cured compound

Property	Condition	Value	Units
Water absorption ISO 62 Methods 1 & 2	4 days RT	1.3	%

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