ELANTAS
Electrical Insulation

Distributeur : JBG-METAFIX

Product Information

Electronic Protection System

Thin Film Coating, UV Cure

Bectron® PL 5622-250

ELANTAS Europe 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® PL 5622-250 is a solvent free one-component thin film coating based on modified epoxy chemistry. It can be cured by UV irradiation and/or heat.

The formulation and performance of Bectron® PL 5622-250 are suited to the most demanding requirements of automotive and other applications as well serial production systems.

Bectron® PL 5622-250 has zero VOC is lead-free and satisfies the requirements of the ROHS directive.

Bectron® PL 5622-250 can survive temperature shock and temperature cycling resistance such as -40 to +125°C (e.g. IPC Test 2.6.7.1 Class 2) for more than 500 cycles

Areas of application

Bectron® PL 5622-250 is a VOC-free conformal coating with the excellent electrical performance expected of epoxy systems and excellent adhesion to most surfaces. As a thin film it suitable for coating of:

- assembled printed circuit boards for electronics
- hybrids
- SMD modules

It provides good protection against moisture, corrosion and migration as well as vibration.

Properties

- Rapid UV curing
- Optional secondary heat cure
- Temperature resistance -40 up to +150°C
- Themp.Shock (-40°C / 125°C) > 500 cycles
- SIR 85 / 85: > 500 MΩ / 500h
- Short Temperature resistance up to 170°C
- Good Adhesion
- Good dielectric properties
- VOCfree
- ROHS compliant
- UL V0 complied

Resistance to Harsh Conditions

Components varnished with Bectron® PL 5622-250 provide maximum protection against contaminants such as moisture and dust and many chemicals. It is resistant to corrosive gas atmosphere, weak acid fuels, oils, glycols and many other fluids used in automotive and shipping industry.

Bectron® PL 5622-250 can survive temperature shock and temperature cycling resistance such as -40 to +150°C for several cycles

Storage

Bectron® PL 5622-250 should be stored in closed original containers storage for 6 months. Storage at Room-Temperature is recommended.

Preparation

The components to be coated should be clean dry and free from grease and compatibility between the resin and all materials on a PCB should be checked prior to use. Residual water from washing the PCB can cause bubbles so low solids flux or alcohol based cleaning materials are recommended.

Processing

Bectron® PL 5622-250 has low viscosity to be suitable for automatic robot systems. Selective coating can be applied by commercial nozzles such as select spray, swirl coating, needle dispensing or jetting. It can also be applied manually by dipping or brushing.

Inspection of the area coated is possible as the coating is fluorescent under UV light.

Curing

Fast curing by UVA (315 - 380nm) @ 2.000 mJ/cm².

- In case of using UVA, the coating thickness should be below 200µm.
- **An iron (Fe) iodide lamp mandatory**

Heat curing @ 90°C for 30 minutes

When UV curing was used, if resin flows underneath the components or other areas, heat cure is needed harden the coating completely.

Table 1 - Typical properties of Coating Bectron® PL 5622-250

Property	Conditions	Value	Unit
Colour		transparent	
Viscosity (DIN 53019)	23°C	250 ± 100	mPas
Specific gravity (DIN EN ISO 2811-2)	20°C	1.11 ± 0.05	g/cm³
Shelf Life	23 °C	6	Months

Table 2 – Curing Conditions

Property	Condition	Value	Unit
UVA	2000 ± 500mJ/cm²	5 ± 2	sec
Heat	30 min.	90	°C

Table 3 – Thermal Properties of cured coating

Property	Condition	Value	Units
Temperature Resistance (IEC 60216)		+150	°C
Flammability	UL 94	V0	

Table 4 - Mechanical properties of cured coating

Property	Condition	Value	Units
Mandrel Bend Test (IEC 60464-2)	3 mm, 0.06 mm film	>180	°
Specific Gravity (DIN 16945)	20°C	1.11 ± 0,05	g/cm³
Hardness (ISO 868)	23°C	85 ± 5	Shore A
Glass transition temperature Tg IEC 61006	penetration mode	-17	°C
Linear expansions coefficient Beck M56	above Tg	1,8 x 10^{-4}	°K^{-1}
Temperature Range		-40 to +150	°C

Table 5 – Dielectric properties of cured coating

Property	Condition	Value	Units
Permittivity (IEC 60250)	23°C 10 KHz	5.1	
Dielectric Dissipation Factor (IEC 60250)	23°C 10 KHz	0.01	
Dielectric Strength (IEC 60464 part 2) - After 24 hours water immersion	23°C	50 38	KV/mm KV/mm
Volume Resistivity (IEC 60464 part 2) After 7 days in water	23°C 23°C	7.4 x 10^{14} 6.7 x 10^{10}	Ω • cm Ω • cm
Tracking resistance (IEC 60112)		600	CTI

Table 6 - Chemical properties of cured compound

Property	Condition	Value	Unit
Water absorption ISO 62 Method 1		< 1,00	%