Technical Data Sheet

Protective Polymer Coating
242-SB

Application

242-SB (Blue) is a screen-printable, mineral-filled epoxy coating which is extremely solvent resistant when properly cured, even to harsh solvents and under high pressure. This material is thermosetting and can be cured for 10 - 30 minutes at 150 °C. Solvent resistance is improved with longer curing times. Lower temperature cures are possible. The material can be used to protect cermet circuits on alumina or porcelain enameled steel. It can also be used as crossover or multilayer dielectrics in additive polymer thick film circuits. Coating 242-SB is compatible with thermosetting polymer silvers such as 1109-S on PC boards. Because the cured film is hard, this material is not recommended for repeated flexing or use on flexible substrates.

Coating 242-SB is formulated and processed to be RoHS compliant.

Typical Formulation Properties

Rheology: Thixotropic, screen printable paste

Viscosity: 70 ± 10 Pa.s at 25.5 ± 0.5 °C when measured using a Brookfield RVT, 10 rpm, No. 6 spindle.

Colour: Blue

Storage and Shelf Life: This product should be stored in tightly sealed containers at 25 °C, in a dry place away from direct sunlight. The shelf life of a factory sealed container is a minimum 6 months from date of shipment when properly stored.

Typical Process Parameters

Thinning: This paste is formulated at the appropriate viscosity for the intended application. Thinner 402 or BCA may be used to replace solvent loss.

Printing: A 200 mesh stainless steel screen with ~30.5 µm thick emulsion is recommended.

Screen Cleaning: Use cellosolve acetate or BCA, followed by acetone (Note 1).

Levelling Time: 5 – 10 min

Drying Time (at 125 °C): 10 – 15 min

Curing: (Note 2) 125 °C for one hour or 150 °C for 30 minutes.

Typical Properties:

Thickness: 63.5 ± 10 µm

Dielectric Constant (K) at 1 k Hz:
(at 25 °C) 6 – 10

Dissipation Factor at 1 kHz:
(at 25 °C) < 0.75%

Insulation resistance:
(at 50V DC) > 10^{11} Ω

Breakdown Voltage:
(at 25 °C in air) > 500 V/63.5 µm

Curing Conditions & Solvent Resistance Test Results:

	Gasohol (85% gasoline, 15% methanol) Vapor phase: 48 °C	100% methanol Vapor phase: 64 °C	Glass Cleaner (water/ethanol/ detergent mixture) Liquid phase: 70 °C
Curing Time	100 h	100 h	30 min
150°C, 30 min	Good*	Good	Film peel
150°C, 45 min	Good	Good	Good
150°C, 60 min	Good	Good	Good

*Good: no film peel, no blisters

Note 1: Follow manufacturer´s recommended safety precautions when using these solvents or any other solvent.

Note 2: A longer curing time at 150 °C (up to 2 h) improves solvent resistance. Alternatively, higher temperatures for shorter times may be used, although 242-SB may experience a slight color darkening at 200 °C.

EU RoHS Directive 2011/65/EU