

# Technical Data Sheet

## Protective Polymer Coating 240-SB BLACK

### Application

240-SB BLACK is a mineral-filled, thermosetting modified silicone coating. It has been specifically formulated as a screen-printable protective coating for thick film conductors, resistors and capacitors on ceramic, porcelain enameled steel and printed circuit boards. Only one layer (~25 µm) is required when used as a protective coating.

Infrared curing can be used provided that there is adequate ventilation in the oven. However this is not recommended for thick coatings. The best results, easily tested by a solvent resistance check, are obtained by using a box oven and ensuring that the printed substrates are maintained at 200 °C for one hour.

### Typical Formulation Properties

**Rheology:** Thixotropic, screen printable paste

**Viscosity:** 140 ± 10 Pa.s at 25.5 ± 0.5 °C when measured using a Brookfield RVT, 10 rpm, ABZ spindle.

**Storage and Shelf Life:** This product should be stored in tightly sealed containers at 20 – 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 may be used to replace solvent loss.

**Printing:** A 200 mesh stainless steel screen with ~25 µm thick emulsion is recommended

**Levelling Time (20 °C):** 5 - 10 min

**Drying Time (at 125 °C):** 10 - 15 min

**Curing Schedule:** 150 °C/2 h

**Substrate for Calibration:** 96% alumina

### Typical Properties:

**Cured Thickness:**  
(measured on 96% alumina) 20 - 40 µm

**Approximate Coverage:** 120 cm<sup>2</sup>/g

**Volume Resistivity:** > 10<sup>10</sup> Ω.cm

**Service Temperature:** -100 to +150 °C

**Dielectric Constant (K) at 1 kHz:**  
(at 25 °C) 6 - 8

**Dissipation Factor at 1 kHz:**  
(at 25 °C, depending upon conductor) < 0.1%

**Insulation Resistance:**  
(at 100V DC) > 10<sup>10</sup> Ω

**Breakdown Voltage:**  
(at 25 °C in air) > 500 V/ 50 µm

**Solvent Resistance:** Good resistance to Acetone when fully cured.



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