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# 240-SB
# 240-SB FL
# 240-SB Colors

## POLYMER PROTECTIVE COATING

ESL 240-SB is a mineral filled, thermosetting modified silicone coating, and cures by crosslinking. 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. The fine line version is designed for intricate solder dams, and other fine-line requirements. Both rheologies are available in standard blue, black, and colors.

240-SB is supplied primarily in a blue color and forms an opaque film. Other colors available are black, white, and red. They are commonly used as marking inks.

Infrared curing of these products can be done provided that adequate ventilation of the curing oven is provided.

The best results, easily tested by a solvent resistance check, are obtained by using a drying oven and assuring that the printed substrates are maintained at 200°C for one hour, or two hours at 150°C. At temperatures above 250°C all colors, except black, will darken. The most durable coatings are obtained with the highest temperature cures.

After printing, screen cleaning should be carried out using MEK, xylene, toluene, or other ketone, ester, or aromatic hydrocarbon solvents.



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See Caution and Disclaimer on other side.

## PASTE DATA

| | |
|---|---|
| **RHEOLOGY:** | Thixotropic, screen printable paste |
| **VISCOSITY:** (Brookfield RVT, ABZ spindle, 10 rpm, 25.5°C±0.5°C) | |
| **240-SB, 240-SB Colors** | 150±25 Pa·s |
| **240-SB FL** (Blue and Black) | 225±25 Pa·s |
| Note: FL designates Fine Line. | |
| **COLORS:** | Blue, Black, White, & Red |
| **SHELF LIFE:** (25°C) | 6 months |

## PROCESSING

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|---|---|
| **SCREEN MESH/EMULSION:** | |
| **240-SB** | 150-200 mesh/25 □m |
| **240-SB FL** | 325 mesh/20 □m |
| **LEVELING TIME (25°C):** | 5-10 minutes |
| **DRYING AT 125°C:** | 10-15 minutes |
| **CURING SCHEDULES:** (Above 250°C colors, except black. will darken. Adequate ventilation to ensure removal of solvents is necessary when curing) | 150°C/2 hours, or 200°C/1 hour |
| **CALIBRATION:** | 150°C/2 hours in a well-ventilated box oven |
| **IR CURING:** (Adequate ventilation is necessary when curing by IR to ensure removal of solvents) | |
| **Suggested IR curing schedule:** | 260°C, belt speed - 8 inches/minute, total time - 20 minutes. |
| **SUBSTRATE:** | 96% alumina |
| **THINNER:** | ESL 402 |

## TYPICAL PROPERTIES

| | |
|---|---|
| **SURFACE FINISH:** | Semigloss |
| **VOLUME RESISTIVITY:** (50 µm ± 5 µm cured thickness on 96% alumina) | > $10^{10}$ Ω-cm |
| **PRINTING RESOLUTION:** **240-SB FL (Line / Space)** | 150 µm x 150 µm |
| **DIELECTRIC CONSTANT (K):** **(at 1 kHz)** | 6-8 |
| **DISSIPATION FACTOR:** (Depending upon conductor) **(1 kHz at 25°C)** | ≤ 0.1% |
| **INSULATION RESISTANCE:** **(at 1000 V DC)** | ≥ $10^{10}$ Ω |
| **BREAKDOWN VOLTAGE:** **(at 25°C in air)** | ≥ 500 V/50 µm |
| **SERVICE TEMPERATURE:** | -100°C to 150°C |

**SOLVENT RESISTANCE:**When properly cured, 240-SB is resistant to most solvents. It may be softened by acetone or methylene chloride. When tested for solvent absorption after a two-minute immersion in isopropyl alcohol, 240-SB will increase in weight by less that 0.15%.