



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

416 EAST CHURCH ROAD  
KING OF PRUSSIA, PA 19406-2625, U.S.A

T: 610-272-8000  
F: 610-272-6759

[www.electroscience.com](http://www.electroscience.com)

# PROTECTIVE POLYMER COATING

# 242-SB

**RoHS Compliant\***

ESL 242-SB is a screen-printable, thermo-setting, mineral-filled epoxy coating that is resistant to solvent attack when fully cured. This coating may be used to protect thick film circuits on alumina or porcelain enamelled steel. A typical polymer thick film multilayer build on printed circuit board (FR4) material consists of 1109-S / 242-SB / 1109-S electro-less nickel-plated. Only one layer (~25µm) is required when used as a protection; two layers are required for multilayer work.

Due to its mineral-filler, the 242-SB Series polymer coatings are not recommended for repeated flexing actions on plastic film substrates.

After printing, screen cleaning should be carried out using hydrocarbon solvent of low flash-point (as used in the PCB industry).

## PASTE DATA

**Rheology:** Thixotropic, screen-printable paste

**Viscosity:**  
(Brookfield RVT, 10 rpm  
ABZ Spindle, 25.5 ± 0.5 °C) 80 ± 20 Pa.s

**Shelf Life (20 - 25 °C):** 6 months

## PROCESSING

**Screen Mesh, Emulsion:** 200 S/S, 25 µm

**Levelling Time (20°C):** 5 - 10 min

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

**Curing Schedules:** 150°C / 2hrs  
Optimum: 200°C / 1hr

**Substrate for Calibration:** 96% alumina

**Thinner:** ESL 402

ESL Europe 242-SB 0305-F

### ESL Affiliates

ESL Europe (Agmet Ltd) • 8 Commercial Road • Reading • Berkshire • England • RG2 0QZ • Tel: +44 (0) 118 918 2400 • Fax: +44 (0) 118 986 7331 • Sales@ESLEurope.co.uk

ESL Nippon • Sukegawa Bldg. • 6<sup>th</sup> floor • 3-4 Yanagibashi 1-chome • Taito-ku • Tokyo 111, Japan • Tel: +81-3-3864-8521 • Fax: +81-3-3864-9270 • Sales@ESL-Nippon.co.jp

ESL China • Room #1707, Tower A, City Center of Shanghai • 100 Zunyi Road • Shanghai, China 200051 • Tel: +86-21-6237-0336 and 0337 • Fax: +86-21-6237-0338  
ESLChina@eslshanghai.net

See Caution and Disclaimer on other side.

## TYPICAL PROPERTIES

<b>Cured Thickness:</b> (2 layers measured on 96% alumina)	45 ± 10 µm
<b>Approximate Coverage:</b>	120 cm <sup>2</sup> / g
<b>Volume Resistivity:</b>	>10 <sup>10</sup> mΩ.cm
<b>Service Temperature:</b>	-100 to +150 °C
<b>Dielectric Constant (K) at 1 kHz:</b> (at 25°C)	5 - 10
<b>Dissipation Factor at 1 kHz:</b> (at 25°C, depending upon conductor)	<0.75%
<b>Insulation Resistance:</b> (at 100V DC)	>10 <sup>10</sup> Ω
<b>Breakdown Voltage:</b> (at 25°C in air)	> 500 V / 50µm
<b>Solvent Resistance:</b>	Good resistance to acetone when fully cured

ESL Europe 242-SB 0305-F

---

\*None of the six substances referred to in the RoHS Directive (2002/95/EC) are used in the formulation of this product.

**CAUTION:** Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapours emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

**DISCLAIMER:** The product information and recommendations contained herein are based on data obtained by tests we believe to be accurate, but the accuracy and completeness thereof is not guaranteed. No warranty is expressed or implied regarding the accuracy of these data, the results obtained from the use hereof, or that any such use will not infringe any patent. ElectroScience assumes no liability for any injury, loss, or damage, direct or consequential, arising out of its use by others. This information is furnished upon the condition that the person receiving it shall make his own tests to determine the suitability thereof for his particular use, before using it. User assumes all risk and liability whatsoever in connection with his intended use. ElectroScience's only obligation shall be to replace such quantity of the product proved defective.

---