



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

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# CERMET HIGH GAUGE FACTOR RESISTOR SYSTEM

# 3424

ESL 3424 is a high gauge factor, low noise, resistor paste specifically designed for piezo-resistive applications on alumina or other ceramic membranes or substrates.

## PASTE DATA

|                                                                              |                                     |
|------------------------------------------------------------------------------|-------------------------------------|
| <b>Rheology:</b>                                                             | Thixotropic, screen-printable paste |
| <b>Viscosity:</b><br>(Brookfield RVT, 10 rpm,<br>ABZ spindle, 25.5 ± 0.5 °C) | 225 ± 25 Pa.s                       |
| <b>Shelf Life (20 - 25 °C):</b>                                              | 6 months                            |

## PROCESSING

|                                   |                       |
|-----------------------------------|-----------------------|
| <b>Screen Mesh, Emulsion:</b>     | 200 S/S, 12.5 µm      |
| <b>Levelling Time (at 20°C):</b>  | 5 - 10 min            |
| <b>Drying Time (at 125°C):</b>    | 10 - 15 min           |
| <b>Firing Temperature Range:</b>  | 850 - 1000°C (in air) |
|                                   | Optimum: 850°C        |
|                                   | Time at peak: 10 min  |
| <b>Rate of Ascent/Descent:</b>    | 50 - 60 °C / min      |
| <b>Substrate for Calibration:</b> | 9635-A on 96% alumina |
| <b>Thinner:</b>                   | ESL 401               |

ESL Europe 3424 0012-A

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See Caution and Disclaimer on other side.

## TYPICAL PROPERTIES

|                                                                                            |                         |
|--------------------------------------------------------------------------------------------|-------------------------|
| <b>Dried Print Thickness:</b><br>(measured on a 1.25 mm x 1.25 mm resistor on 96% alumina) | 22.5 ± 2.5 µm           |
| <b>Approximate Coverage:</b>                                                               | 120 cm <sup>2</sup> / g |
| <b>Resistivity:</b><br>(measured on a 1.25 mm x 1.25 mm resistor)                          | 9 - 10 K Ω / □          |
| <b>TCR:</b><br>(measured on a 1.25 mm x 1.25 mm resistor)                                  | ± 100 ppm / °C          |
| <b>Noise Index:</b><br>(measured on a 1.0 mm x 1.0 mm resistor terminated on 8836)         | < - 10 dB               |
| <b>Guage Factor:</b><br>(measured on a 1.0 mm x 1.0 mm resistor terminated on 8836)        |                         |
|                                                                                            | Longitudinal: 8 - 10    |
|                                                                                            | Transverse: 5 - 7       |
|                                                                                            | Nonlinearity: ≤ 1%      |
|                                                                                            | Hysteresis: ≤ 1%        |

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**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.

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