



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

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# CERMET SILVER/PALADIUM CONDUCTOR 9693-SA

ESL 9693-SA is a low-cost, high speed printing palladium silver conductor that exhibits excellent adhesion, good solderability, and high conductivity.

## PASTE DATA

|   |                                    |
|---|------------------------------------|
| <b>Rheology:</b>  | Thixotropic screen-printable paste |
| <b>Viscosity:</b><br>(Brookfield RVT, 10rpm,<br>ABZ Spindle, 25.5 ± 0.5 °C) | 150 ± 25 Pa.s                      |
| <b>Bonding Mechanism:</b>   | Mixed                              |
| <b>Shelf Life (20 - 25 °C):</b>   | 6 months                           |

## PROCESSING

|                                   |                           |
|-----------------------------------|---------------------------|
| <b>Screen Mesh, Emulsion:</b>     | 325 S/S, 25 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>  | 750 - 950 °C              |
|                                   | Optimum: 850 °C           |
|                                   | Time at peak: 10 - 12 min |
| <b>Rate of Ascent/Descent:</b>    | 60 - 100°C / min          |
| <b>Substrate for Calibration:</b> | 96% alumina               |
| <b>Thinner:</b>                   | ESL 401 or 413            |

ESL Europe (KOP) 9693-SA 9711-New

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See Caution and Disclaimer on page 2.

## TYPICAL PROPERTIES

|  |                                     |
|--|-------------------------------------|
| <b>Fired Thickness:</b>  | 10 - 15 $\mu\text{m}$               |
| <b>Approximate Coverage:</b>   | 90 - 100 $\text{cm}^2/\text{g}$     |
| <b>Resistivity:</b>  | $\leq 3 \text{ m}\Omega/\text{sq.}$ |
| <b>Printing Resolution:</b><br>(line/space)  | 0.250 mm / 0.250 mm                 |
| <b>Solder Wettability:</b><br>(RMA Flux, 5 sec. dip<br>62Sn/36Pb/2Ag, 220°C)   | Excellent                           |
| <b>Solder Leach:</b><br>(No. of 10 sec. dips to double lowest resistance of<br>100 mm x 0.25 mm conductor, 62Sn/36Pb/2Ag, 220°C) | 4 - 8 dips                          |
| <b>Adhesion:</b><br>(90° pull, 2 mm x 2 mm pads, 62Sn/36Pb/2Ag, 220°C)   |                                     |
|  | Initial pull strength: > 4.5 kg     |

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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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