



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

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## PALLADIUM SILVER CONDUCTOR

# 9647

### RoHS Compliant\* Conductor with Excellent Adhesion, Solderability, and Wirebondability

ESL 9647 is a palladium silver conductor with approximately a 3:1 Ag to Pd ratio. It is designed to have good initial adhesion and good thermal aging adhesion after an extended period of time at temperature. This conductor also has excellent large-diameter aluminum wirebondability. ESL 9647 is lead, cadmium, and nickel free.

### PASTE DATA

<b>RHEOLOGY:</b>	Thixotropic, screen-printable paste
<b>VISCOSITY:</b> (Brookfield RVT, ABZ spindle, 10 rpm, 25.5°C±0.5°C)	325±25 Pa·s
<b>BONDING MECHANISM:</b>	Mix-bonded
<b>SHELF LIFE:</b> (25°C)	6 months

### PROCESSING

<b>SCREEN MESH/EMULSION:</b>	325 mesh/25 µm
<b>LEVELING TIME:</b> (25°C)	5-10 minutes
<b>DRYING:</b> (125°C)	10-15 minutes
<b>FIRING TEMPERATURE:</b>	850°C
<b>TIME AT PEAK TEMPERATURE:</b>	10 minutes
<b>RATE OF ASCENT/DESCENT:</b>	60°C-100°C/minute
<b>SUBSTRATE FOR CALIBRATION:</b>	96% alumina
<b>THINNER:</b>	ESL 413

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See Caution and Disclaimer on other side.

## TYPICAL PROPERTIES

<b>FIRED THICKNESS:</b>	10±3 µm
<b>RESISTIVITY:</b>	≤ 25 mΩ/sq.
<b>PRINTING RESOLUTION:</b> (Line/space)	125 µm/125 µm
<b>SOLDERABILITY:</b> (60/40 Sn/Pb solder, 250°C±5°C)	Excellent
<b>SOLDER LEACH RESISTANCE:</b> (60/40 Sn/Pb solder, 2.0 mm x 2.0 mm pads, 250°C±5°C, 10 sec. dip)	
<b>Number of dips:</b>	≥ 2
<b>PEEL ADHESION:</b> (60/40 Sn/Pb solder, 2.0 mm x 2.0 mm pads)	
<b>Initial:</b>	≥ 20 N
<b>1000 hours at 150°C:</b>	≥ 18 N
<b>WIREBONDABILITY:</b> (250 µm Al wire, 100% wirebreaks)	≥ 450 g

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\* Complies with RoHS, ELV, WEEE and CHIP 3 EC directives.

**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 vapors 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. Electro-Science 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 their own tests to determine the suitability thereof for their particular use, before using it. User assumes all risk and liability whatsoever in connection with their intended use. Electro-Science's only obligation shall be to replace such quantity of the product proved defective.

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