



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

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### CERMET SILVER CONDUCTOR

### 9903

#### RoHS Compliant\* Silver

ESL 9903 is a high-conductivity silver conductor developed for use with LED circuit packaging and has the benefit of low-temperature firing. It has excellent compatibility with 4613 dielectric and adheres directly to aluminum substrates for thermal via applications.

#### PASTE PROPERTIES

**Rheology:** Thixotropic, screen-printable paste  
**Viscosity:** (Brookfield RVT/ABZ, 10 rpm, 25.0°C – 26.0°C) 150 ± 50 Pa·s

#### PROCESSING

<b>SCREEN MESH/EMULSION:</b>	200-325 / 5-25 μm
<b>LEVELING TIME:</b> (25°C)	5-10 minutes
<b>DRYING AT 125°C:</b>	10-15 minutes
<b>FIRING TEMPERATURE:</b>	530°C
<b>TIME AT PEAK:</b>	5-10 minutes
<b>TOTAL CYCLE TIME:</b>	60 minutes
<b>SUBSTRATE OF CALIBRATION:</b>	4613 dielectric on aluminum
<b>THINNER:</b>	ESL 401

9903 1305-New

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See Caution and Disclaimer on other side.

## TYPICAL PROPERTIES

<b>FIRED THICKNESS:</b>	14.0 ± 4.0 μm
<b>RESISTIVITY:</b>	≤ 3 mΩ/sq.
<b>PRINTING RESOLUTION:</b> (Line/Space)	125 μm x 125 μm
<b>SOLDERABILITY:</b>	
(62Sn/36Pb/2Ag at 220 ± 5°C)	≥ 95%
(95.5Sn/3.8Ag/0.7Cu, SAC 387, at 250 ± 5°C)	≥ 95%
<b>ADHESION STRENGTH:</b>	> 25 N

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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.

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