



ESL ELECTROSCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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SILVER CONDUCTOR

9912-G

RoHS Compliant* Conductive Composition

ESL 9912-G is a newly developed silver fuel cell and interconnect paste exhibiting excellent conductivity, adhesion to 96% alumina, fuel cell and other tape-cast materials, and excellent solder leach resistance. Its main use is as a ground plane conductor and SOFC Interconnect. It is compatible with 4920 dielectric and SOFC tape-cast materials.

PASTE DATA

| | |
|--|-------------------------------------|
| RHEOLOGY: | Thixotropic, screen-printable paste |
| VISCOSITY: (Brookfield RVT, ABZ Spindle, 10 rpm, 25.5°C±0.5°C) | 250±25 Pa·s |
| BONDING MECHANISM: | Mixed |
| SHELF LIFE: (25°C) | 6 months |

PROCESSING

| | |
|----------------------------------|-------------------|
| SCREEN MESH/EMULSION: | 325/25 µm |
| LEVELING TIME: (25°C) | 5-10 minutes |
| DRYING AT 125°C: | 10-15 minutes |
| FIRING TEMPERATURE: | 850°C |
| TIME AT PEAK: | 10-12 minutes |
| RATE OF ASCENT/DESCENT: | 60°C-100°C/minute |
| TOTAL CYCLE: | 50 minutes |
| SUBSTRATE OF CALIBRATION: | 96% alumina |
| THINNER: | ESL 413 |

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See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

| | |
|---|-------------------------------------|
| FIRED THICKNESS: | 10-15 μm |
| RESISTIVITY: | $\leq 3 \text{ m}\Omega/\text{sq.}$ |
| PRINTING RESOLUTION: (Line/Space) | 75 μm x 75 μm |
| SOLDER WETTABILITY: (RMA Flux, 5 sec. dip, 62 Sn/36 Pb/2 Ag, 220°C \pm 5°C) | > 95% coverage |
| SOLDER LEACH: (No. of 10 sec. dips to double resistance of 0.25 mm wide x 100 mm long conductor) | |
| 62 Sn/36 Pb/2 Ag, 220°C \pm 5°C | 10 dips |
| ADHESION: (90° pull, 2.0 mm x 2.0 mm pads, 62 Sn/36 Pb/2 Ag, 220°C \pm 5°C) | |
| Initial pull strength: | > 74 N |
| Aged 200 hours at 150°C: | > 74 N |

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*Complies with RoHS, ELV, regulations.

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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