



ESL Electro-Science

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SILVER CONDUCTOR

9912-G

Cadmium-free, Lead-free and Nickel-free

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 401

9912-G 0403-E

ESL Affiliates

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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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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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