



ESL ELECTROSCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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MULTILAYER DIELECTRIC COMPOSITION

4920

Thin-Printing, Cadmium and Lead-Free *

ESL 4920 is a cadmium-free, lead-free, and nickel-free nonporous multilayer dielectric for use on alumina substrates. This dielectric may be used with selected silver or gold based conductors or combinations of these metals. This is intended for applications for which a thinner-printing dielectric is needed.

PASTE DATA

RHEOLOGY:	Thixotropic, screen printable paste
VISCOSITY: (Brookfield RVT, 10 rpm, ABZ spindle, 25.5°C±0.5°C)	300±50 Pa·s
COLOR:	blue
SHELF LIFE: (25°C)	6 months

PROCESSING

SCREEN MESH/EMULSION:	200 or 325/37 µm
LEVELING TIME: (25°C)	5-10 minutes
DRYING AT 125°C:	10-15 minutes
FIRING TEMPERATURE:	850°C
TIME AT PEAK:	10 minutes
RATE OF ASCENT/DESCENT	50°C-60°C/minute
SUBSTRATE FOR CALIBRATION:	96% alumina
THINNER:	ESL 401

4920 0603-A

ESL Affiliates

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See Caution and Disclaimer on other side

TYPICAL PROPERTIES

(measured on 5mm x 5mm capacitors using ESL 9512-G Ag/Pd terminations)

FIRED THICKNESS:

(at least 2 layers between conductors on 96% alumina)

30-40 μm

DIELECTRIC CONSTANT (K) AT 1 MHz: (25°C)

7-10

DISSIPATION FACTOR AT 1 MHz: (25°C)

$\leq 0.75\%$

INSULATION RESISTANCE: (at 100 VDC)

$\geq 10^{10} \Omega \cdot \text{cm}$

BREAKDOWN VOLTAGE:

(at 25°C in air)

$\geq 1,250 \text{ V}/25 \mu\text{m}$

LEAKAGE CURRENT:

(In 1M NaCl solution/10 VDC bias/5 minutes, leakage test pattern)

$< 1 \mu\text{A}/\text{cm}^2$

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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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