ESL ELECTROSCIENCE
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MULTILAYER DIELECTRIC COMPOSITION 4920

Cadmium, Lead & Nickel-Free

ESL 4920 is a cadmium, lead and nickel-free non-porous 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 ± 0.5 °C)	300 ± 50 Pa.s
Colour:	Blue
Shelf Life (20 - 25 °C):	6 months

PROCESSING

Screen Mesh, Emulsion:		200 or 325 S/S, 37.5µm
Levelling Time (at 20°C):		5 - 10 min
Drying Time (at 125°C):		10 - 15 min
Firing Temperature:		850°C
	Time at peak:	10 minutes
Total Firing Cycle:		1 hour
Substrate for Calibration:		96% alumina
Thinner:		ESL 401

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TYPICAL PROPERTIES

(measured on 5 mm x 5 mm capacitors using 9695 Ag/Pd terminations)

Fired Thickness: (at least 2 layers between Ag/Pd conductors on 96% alumina)	30 - 40 µm
Dielectric Constant (K) at 1 MHz: (at 25°C)	7 - 10
Dissipation Factor at 1 MHz: (at 25°C)	< 0.75%
Insulation Resistance: (at 100V DC)	$\geq 10^{10}\Omega$
Breakdown Voltage: (at 25°C in air)	≥ 1250V / 25µm
Leakage Current: (In 1M NaCl solution / 10 VDC bias / 5 minutes, leakage test pattern)	< 1 µA / cm^2

***None of the six substances referred to in the RoHS Directive (2002/95/EC) are used in the formulation of this product.**