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INSULATING COMPOSITION 4916

HOS Heaters on Steel ä • COS Circuits on Steel ä • TFOS Thick Film on Steel ä

FOR 304 TYPE AUSTENITIC STEEL

ESL 4916 is a dielectric composition designed to insulate unoxidized 304 type austenitic steels. Three separately fired layers of 4916, having a total minimum thickness of 80 micrometers, provide excellent breakdown voltage between top conductive prints and the stainless steel base. It is essential that the stainless steel is only handled using protective gloves and that all printing is carried out in clean room conditions. ESL 29XXX Series resistors are recommended for use as the heating elements with 9695 (Pd/Ag) terminations. The heater should be protected by using an additional layer of 4916.

PASTE DATA

RHEOLOGY:	Thixotropic, screen printable paste
VISCOSITY: (Brookfield RVT, ABZ Spindle, 10 rpm, 25.5°C±0.5°C)	125±25 Pa•s
COLOR:	Blue
SHELF LIFE: (25°C)	6 months

PROCESSING

SCREEN MESH/EMULSION:	165/0.0 µm
LEVELING TIME:	5-10 minutes
DRYING AT 125°C: (Depending upon substrate volume)	> 15 minutes
FIRING TEMPERATURE:	850°C

4916 0002-B

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See Caution and Disclaimer on other side.

TIME AT PEAK: 10-12 minutes

- Note: For applications requiring fewer, thicker prints, other screens or stencils may be used. All print operations should be carried out in a clean room.

RATE OF ASCENT/DESCENT: 50°C-60°C/minute

SUBSTRATE FOR CALIBRATION: 120 grit, unoxidized 304 stainless steel
122.5 mm diameter x 1.2 mm

THINNER: ESL 401

TYPICAL PROPERTIES

FIRED THICKNESS:
(At least 3 layers between 9695 and 304 stainless steel, measured using an Elcometer 345 thickness gauge) > 70 µm

BREAKDOWN VOLTAGE:
(Measured on an 88 mm diameter 9695 print on 120 mm diameter area of dielectric at 25°C in air, using a standard Clare Flash Tester) > 1500 VAC

APPROXIMATE COVERAGE: (80 µm thickness) 40 cm^2/g

COMPATIBLE MATERIALS:

Conductive	ESL 9695 (Pd/Ag)
Resistive (Heater tracks)	ESL 29XXX Series
Protective overglaze	ESL 4916

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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