

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Conductors

Product Name: SC 1001



Silver / Platinum (99:1) Conductor / DPIS*
* Development Product Information Sheet

Description

SC 1001 is a screen printable 99 : 1 Silver / Platinum conductor for application of dielectric on steel. SC 1001 shows excellent fired film density, high conductivity, good solder leach resistance and excellent solder acceptance.

Key Benefits

- Excellent solderability and leach resistance
- Compatible with HERAEUS SD 1010 and SD 1019
- Compatible with HERAEUS resistor and SR 21 Series
- Excellent initial and aged adhesion, even after multiple firings
- Very good conductivity
- Excellent fired film density
- Free of lead, nickel and cadmium.
- REACH³ and ROHS⁴ compliant

Processing

- 1) Spatulate well prior to processing.

When stored in a fridge, the paste should have acquired room temperature before being opened, to avoid condensation.

- 2) Print through a 200 – 325 mesh stainless steel screen. Total thickness: 50 – 110 µm.
- 3) Level at room temperature for 5 – 10 minutes.
- 4) Dry at 150 °C for 10 – 20 minutes.
- 5) Fire at 850 °C (peak) for 10 – 12 minutes, and with a total firing cycle time of c. 30 – 60 minutes.

Thinner

HVS 100

Typical Properties (Paste)

Form	Pseudoplastic paste
Viscosity	20 – 45 Pas (25 °C, D = 100/s)
Solids	83.5 % ± 1.5 %
Printing Speed	Up to 20 cm/s
Shelf Life	4 months from date of shipment with correct storage (in a dry, cool (5 – 25 °C) and dark place with container tightly shut).

Typical Properties (Fired)¹

Fired Film Thickness ² (FFT)	10 – 15 µm
Resistivity ²	≤ 3.5 mΩ/□ (FFT: 12 µm)
Solderability (Sn62/Pb36/Ag2)	Good ≥ 95 % (235 °C, 5 sec dip) (assessment acc. DIN 41850-2E)
Adhesion, Aged ² (Sn62/Pb36/Ag2)	≥ 18 N (48 h, 150 °C)
Leach Resistance (Sn62/Pb36/Ag2)	≥ 4 dips (235 °C, 10 sec each)

Compatibility

Dielectric	SD 1010
Overglaze	SD 1019
Resistor	SR 21-350-018 SR 21-350-025 SR 21-350-100

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Legend:

1) Typical property based on laboratory test methods. For optimum results all materials should be fired in a profiled furnace supplied with dried, hydrocarbon and other contaminant free air (PP-1).

2) Measured on alumina 96 % after printing with a 200 mesh steel screen; thickness of screen and emulsion combined was c. 110 µm, and the resultant printed track was 500 µm wide.

3) REACH compliant according to the latest * Annex XIV to Regulation (EC) of the European Parliament and of the council on the Registration, Evaluation, Authorisation and Restriction of Chemicals ("REACH") by European Chemicals Agency and its subsequent amendments; the material does not contain any substance listed in Annex XIV.

4) RoHS compliant according to the latest * Directives (European Union) of Restriction of Hazardous Substances ("RoHS") and its subsequent amendments (including the exceptions related to Pb)

* See the data sheet issue date (DD/MM/YY) as reference of validity of latest edition which is available on request

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