

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Conductors

Product Name: C 4741



Silver / Platinum (54:1) Conductor Paste

Description

C 4741 is a lead free Silver / Platinum conductor with 1.5 % Platinum in the wet paste. It is a new member of HERAEUS' line of lead free conductors with excellent fired film density, high conductivity and good solder leach resistance for applications at elevated temperatures.

Key Benefits

- Excellent leach resistance
- Excellent initial and aged adhesion
- High conductivity
- Excellent fired film density
- Free of lead, cadmium and nickel
- 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 (Pastes)

Form	Pseudoplastic paste
Viscosity	20 – 40 Pas (25 °C, D = 100/s)
Solids	82.3 % ± 1.5 %
Printing Speed	Up to 20 cm/s
Coverage	c. 80 cm ² /g (FFT: 12 µm)
Shelf Life	6 months from date of shipment with correct storage (in a dry, cool (5 to 25 °C) and dark place with container tightly shut).

Typical Properties (Fired)¹

Fired Film Thickn. (FFT) ²	10 – 15 µm
Resistivity ²	≤ 5.0 mΩ/□ (FFT: 12 µm)
Line Definition	≥ 125 µm (200 mesh screen)
Solderability (Sn96/Ag3.5/Cu0.5)	Good ≥ 95 % (245 °C, 5 sec dip) (assessment acc. DIN 41850-2E)
Adhesion, Aged (Sn96/Ag3.5/Cu0.5)	≥ 20 N (48 hrs, 150 °C)
Leach Resistance ² (Sn96/Ag3.5/Cu0.5)	≥ 4 dips (245 °C, 5 sec each)

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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 stainless steel screen; thickness of screen and emulsion combined was c. 100 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)

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