

Conductors

C 4741



Silver / Platinum (54:1) Conductor Paste / DPIS*

* Development Product Information Sheet

Description

C 4741 is a lead, nickel and cadmium free silver – platinum conductor with 1.5 % Pt 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. 36 - 60 minutes.

Thinner

HVS 100

Typical Properties (Pastes)

Form:	Thixotropic paste
Viscosity:	20 - 40 Pas (25°C, D = 100 s ⁻¹)
Solids:	81.9 % ± 1.5 %
Printing Speed:	Up to 20 cm / s
Coverage:	Approx. 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 Thickness ² : (FFT)	10 - 15 µm
Resistivity ² :	≤ 5.0 mΩ / □ (FFT: 12 µm)
Line Definition:	≥ 125 µm (200 mesh screen)
Solderability: (96Sn/3.5Ag/0.5Cu)	Good ≥ 95% (245°C, 5 s dip) (assessment acc. DIN 41850-2 E)
Adhesion, aged: (96Sn/3.5Ag/0.5Cu)	≥ 20 N (48 hrs, 150°C)
Leach Resistance ² : (96Sn/3.5Ag/0.5Cu)	≥ 4 dips (245°C, 5 s each)

Conductors

C 4741



Silver / Platinum (54:1) Conductor Paste / DPIS*

* Development Product Information Sheet

- 1 Typical properties 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. 100 µm, and the resultant printed track was 500 µm wide.
- 3 REACH compliant according to the Commission Regulation (EU) No 143/2011 of 17 February 2011 amending Annex XIV to Regulation (EC) No 1907/2006 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 the Annex XIV.
- 4 RoHS compliant according to the Directives (European Union) No 2011/65/EC of Restriction of Hazardous Substances ("RoHS") and its subsequent amendments (including the exceptions No. 7.c. I of the EU Directive e.g. related to Pb)

The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

Europe [TH]

Heraeus Precious Metals GmbH & Co. KG
Thick Film Materials Division
Heraeusstr. 12 – 14
63450 Hanau
Germany
Tel: +49 (6181) 35 - 5466
E-Mail: th-info@heraeus.com
Internet: www.heraeus-thickfilm.com

Americas [TH]

Heraeus Materials Technology LLC
Thick Film Materials Division
24 Union Hill Road
W. Conshohocken, PA 19428
USA
Tel: +1 (610) 825 - 6050
E-Mail: techservice.hcd@heraeus.com
Internet: www.heraeus-thickfilm.com

Asia [TH]

Heraeus Materials Technology Shanghai Ltd.
No. 1 Guang Zhong Road
Zhuanquiao Town, Minhang District
201108 Shanghai
People's Republic of China
Tel: +86 (21) 3357 - 5688
E-Mail: th.hmts@heraeus.com
Internet: www.heraeus-thickfilm.com