Heraeus

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Conductors

Product Name: C4301 GSD (LPA 509-226)

Silver / Palladium Conductor Paste

Description

C4301 GSD (LPA 509-226) is a screen printable 0.8 : 1 Ag / Pd (alloy) conductor paste which exhibits a high density, high reliability and good fine line resolution.

C4301 GSD (LPA 509-226) has a high Pd content to address increased demands by low sulfur fuel applications. It is both mechanically durable and chemically very resistant, and is hence a frequently preferred material for e.g. fuel sensors.

Key Benefits

- Smooth fired surface
- Excellent conductivity, leach resistance and resistance to silver migration
- Exceptional chemical and physical wear resistance in use as a track material for sliders
- Free of cadmium and nickel
- Free of phthalate
- REACH[4] and ROHS[5] compliant

Processing

1) Spatulate well prior to processing.

   When stored in a refrigerator, 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 minutes, and with a total firing cycle time of c. 30 – 60 minutes.

Thinner

HVS 100

Typical Properties (Paste)

Form	Pseudoplastic paste
Viscosity	25 – 50 Pas (25 °C, D = 100/s)
Solids	83.5 % ± 1.5 %
Printing Speed	Up to 20 cm/s
Shelf Life	6 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, 3] (FFT)	8.5 – 13.0 µm
Line Definition	≥ 125 µm (width and space)
Resistivity[2]	≤ 130 mΩ/□ (FFT: 12 µm)
Aged Adhesion (Sn62/Pb36/Ag2)	≥ 20 N (16 hrs, 25 °C)

Compatibility

Overglazes	IP 9025 Series
Resistors	R 8900 Series R 8900 (WP 09-XY) Series

Technical Data Sheet

Silver / Palladium Conductor Paste

Legend:

[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 after printing with a 325 mesh steel screen; screen thickness and emulsion thickness combined was c. 75 µm, and the resultant printed track was 500 µm wide.

[3] For application with increased chemical and mechanical wear a fired film thickness of > 10 µm is recommended.

[4] 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.

[5] 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

Heraeus Electronics
Heraeus Deutschland GmbH & Co. KG
Heraeusstraße 12 – 14
63450 Hanau, Germany
www.heraeus-electronics.com

Americas
Phone +1 610 825 6050
electronics.americas@heraeus.com

China
Phone +86 21 3357 5457
electronics.china@heraeus.com

Asia Pacific
Phone +65 6571 7677
electronics.apac@heraeus.com

Europe, Middle East and Africa
Phone +49 6181 35 3069, +49 6181 35 3627
electronics.emea@heraeus.com