

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Conductors

Product Name: C4303GSD



Silver / Palladium Conductor Paste

Description

C4303GSD is a screen printable 2.1 : 1 Ag / Pd conductor paste which exhibits a high density, high reliability and good fine line resolution.

It fires to a smooth surface and is mechanically durable and chemically resistant. Hence it is a frequently preferred material for e.g. fuel sensors.

Key Benefits

- Excellent conductivity, leach resistance and resistance to silver migration
- Free of cadmium and nickel
- Free of phthalate
- REACH⁴ and ROHS⁵ 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
RV 372 (Terpineol)

Typical Properties (Paste)

Form	Pseudoplastic paste
Viscosity	30 – 45 Pas (25 °C, D = 100/s)
Solids	81.0 % ± 1.5 %
Printing Speed	Up to 20 cm/s
Coverage	c. 80 cm ² /g (FFT: 12 µm)
Shelf Life	12 months from date of shipment with correct storage (in a dry, cool (2 – 23 °C) and dark place with container tightly shut).

Typical Properties (Fired)¹

Fired Film Thickness ^{2,3} (FFT)	9.0 – 13.0 µm
Line Definition	≥ 125 µm
Resistivity ²	≤ 45 mΩ/□ (FFT: 12 µm)
Solderability (Sn62/Pb36/Ag2)	Good ≥ 95 % (235 °C, 5s dip) (assessment acc. DIN 41850-2 E)
Aged Adhesion (Sn62/Pb36/Ag2)	≥ 20 N (16 hrs, 25 °C)
Leach Resistance (Sn62/Pb36/Ag2)	≥ 4 dips (245 °C, 10s each)

Compatibility

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

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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

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