

Resinates

RP 050209 - 12.5%



Gold Resinate Paste / DPIS*

* Development Product Information Sheet

Description

RP 050209 -12.5% is a thin film conductor paste for use on alumina and glazed alumina. RP 050209 - 12.5% contains gold and a small amount of non-precious metals in form of soluble organo metallic compounds.

After firing a conducting gold film is obtained. Due to simultaneous sintering of non-precious metal oxides RP 050209 - 12.5% offers a high adhesion on above mentioned substrates.

To reach higher film thicknesses it is necessary to print several layers on top of each other. Each applied layer has to be fired separately.

Key Benefits

- For use as thermal print heads, pressure sensors and etched conductor structures
- Free of lead, cadmium and nickel
- Free of phthalate
- REACH³ and RoHS⁴ compliant

Processing

1. Spatulate well prior to processing. When stored in a refrigerator allow paste to come to room temperature prior to opening, to avoid condensation.
2. Print through a 300 - 350 mesh stainless steel screen with an emulsion thickness of 15 - 20 μm .
3. Let the print settle at room temperature for 10 minutes.
4. Dry at 90 °C for 15 minutes. Do not exceed peak of 130 °C.
5. Fire at 850 °C (peak) for 7 - 10 minutes and with a total firing cycle time of 40 - 60 minutes.

Typical Properties (Paste)

Form:	Thixotropic paste
Viscosity:	7 - 10 Pas (20 °C, D = 500 sec ⁻¹)
Solid Content:	12.8 ± 0.75 %
Printing Speed:	Up to at least 10 cm/s
Coverage: (325 mesh screen)	Approx. 400 cm ² / g (FFT at 0.4 μm)
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 : (FFT)	0.1 - 0.5 μm
Line Definition:	≥ 120 μm (width and space)
Resistivity (25 °C) ² :	250 - 450 m Ω /□ at 10 μm DFT ⁵

Thinner

HVS 100

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- 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 325 mesh steel screen; thickness of screen and emulsion combined was c. 15 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; we define a material as REACH compliant, as long as substances used are not recorded 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)
- 5 DFT: Dried Film Thickness; FFT: Fired Film Thickness

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.

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