

Conductors

C 5007

Gold Conductor Paste

Description:

C 5007 is a wire bondable cadmium-free gold conductor, containing a mixed bonded Au formulation. It offers excellent aged wire bond adhesion and contact resistivity properties. It is compatible with the recrystallizable dielectric, IP 9117 series, and has been formulated to be resistant to blistering after multiple firings, also when fired together and "on top" of the Heraeus C 2000 nickel-free range of Ag / Pd conductors.

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 screen.
3. Level at room temperature for 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

Properties (Paste):

Viscosity: 30 – 90 Pas
(25 °C, D = 75 s⁻¹)

Printing Speed: Up to at least 10 cm / s

Coverage: c. 50 cm² / g (FFT: 9 µm)

Shelf Life: 6 months, with correct storage at 2 to 23 °C, in a cool, dry, dark place, and with the container tightly shut.

Properties (Fired)¹:

Fired Film Thickness²: 6 – 12 µm

Line Definition²: ≥ 100 µm

Resistivity²: ≤ 4.5 mOhms / □ (FFT: 12 µm)

Wire Bond Adhesion³: Initial: 14 cN
(30 µm Au wire on Alumina and IP 9117 series)

1000 hrs / 150 °C 13 cN

1000 hrs / 85 °C / 85% R.H.: 13 cN

Compatibility:

Print No.1: C 2000 Series Ag / Pd conductors (Ni-free)

Print No.2: C 5007

Alumina or dielectric IP 9117 series underneath

- 1 Typical property based on laboratory test methods. For optimum results all materials should be fired in a profiled furnace supplied with dried, hydrocarbon-free 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 result printed track was 500 µm wide.
- 3 Au wire bonded with a Hughes TSB 460 in Heraeus' labs; other values may depend on various parameters e.g. the bonder, the bonding speed, the wire, the loop lengths, employed etc.

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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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