

Conductors

C 6012

Solderable AuPdPt Conductor Paste for Fuel Sensors

Description

C 6012 is a solderable Au/Pd/Pt conductor paste for fuel sensor applications.

C 6012 is optimized in hardness and surface density. It shows excellent printability resulting in high line definition and smooth surface under various drying conditions.

Key Benefits

- Most suitable material for low sulfur fuel application because of absence of silver
- Very smooth fired surface which exhibits very durable mechanical resistance and chemically very resistant
- Solderable with customary solder alloys
- Free of cadmium and nickel
- 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 200 – 325 mesh screen. 0.03 – 0.04 mm \varnothing wire and 20 – 30 μ m emulsion.
3. Level at room temperature for 10 minutes.
4. Dry at max. 150 °C for 8 – 10 minutes.
5. Fire at 850 °C (peak) for 10 minutes, and with a total firing cycle time of 30 – 60 minutes.

Thinner

HVS 100

Typical Properties (Paste)

Form:	Thixotropic paste
Viscosity:	70 – 90 Pa s, (25 °C, D = 50 s ⁻¹)
Solids:	85.0 % \pm 1.0 %
Coverage:	c. 65 cm ² /g (FFT: 10 μ m)
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)	7.5 – 11.5 μ m
Line Definition ² :	\geq 125 μ m
Resistivity ² :	\leq 85 m Ω / \square (FFT: 10 μ m)
Adhesion ² : (Sn62/Pb36/Ag2)	\geq 20 N (16h at RT)
Solderable with:	Sn62 / Pb36 / Ag2 Sn96.5 / Ag3.5 Sn63 / Pb37

Typical adhesion data:

Storage	Solder Alloy		
	Ag2	Ag3.5	Pb37
initial	\geq 20 N	\geq 20 N	\geq 20 N
48h / 100 °C	\geq 20 N	\geq 20 N	\geq 20 N
500h / 100 °C	\geq 20 N	\geq 18 N	\geq 20 N
1000h / 100 °C	\geq 18 N	\geq 15 N	\geq 18 N

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- 1 Typical property 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 result printed track was 500 µm wide.
- 3 REACH compliant according to the Annex XIV (Feb. 17, 2011) of Commission Regulation (EU) No 143/2011 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; 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. 1 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.

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