Heraeus

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Conductors

Product Name: C8830

Low Temperature Silver Conductor Paste

Description

C8830 and C8830A are lead free, low temperature and screen printable pure silver conductor. They exhibit excellent solder ability on a wide range of glass substrates with or without coating such as ITO[3] and FTO[3].

Key Benefits

- Excellent printability
- Excellent solder ability and leach resistance
- Very good conductivity
- Free of lead, cadmium, nickel and phthalates
- RoHS[4] and REACH[5] 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 – 400 mesh stainless steel screen.

3) Level at room temperature for 5 – 10 minutes.

4) Dry at 150 °C for 10 – 20 minutes.

5) Fire at 420 – 650 °C (peak) for 10 – 20 minutes, and with a total firing cycle time of c. 30 – 60 minutes.

   Compensate lower firing temperature with longer dwell time at peak. The firing cycle will depend on glass substrate used.

Thinner

HVS 100

Typical Properties (Pastes)

Form C 8830 C 8830A	Pseudoplastic paste especially for large area printing for line printing
Viscosity C 8830 C 8830A	 25 – 40 Pas (25 °C, D = 75/s) 40 – 55 Pas (25 °C, D = 100/s)
Solids C 8830 C 8830A	 77.0 % ± 1.5 % 79.5 % ± 1.5 %
Printing Speed	Up to 20 cm/s
Shelf Life	3 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] C 8830[2]	 6 – 10 µm
C 8830A	8 – 13 µm (200 mesh screen, 30 µm emulsion)
C 8830A line definition[2]	≥ 150 µm (width and space)
Resistivity[2]	≤ 4.5 mΩ/□ (FFT: 10 µm)
Solderability (Sn96/Ag3.5/Cu0.5)	Good ≥ 95 % (245 °C, 5s dip) (assessment acc. DIN 41850-2 E)
Leach Resistance[2] (Sn96/Ag3.5/Cu0.5)	≥ 3 dips (245 °C, 5 s each)

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Legend:

[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 on glass slide 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] ITO: Indium-Tin-Oxide; FTO: Fluorine-Doped Tin Oxide

[4] 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)

[5] 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.

* 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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