

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Conductors

Product Name: C7440



Fine Line, Wire Bondable Copper Conductor

Description

C7440 is a copper conductor paste designed for screen printing application on alumina substrates where soldering and aluminum wire bonding may be required. It has the capability to print 100 micron lines and spaces using 280 or 325 mesh screens with 0.2 to 0.5 mil emulsion.

Key Benefits

- REACH¹ and ROHS² compliant
- Lead, cadmium and nickel free
- Exceptionally high conductivity
- Migration resistant
- ENIG plateable on alumina

Typical Properties

Resistivity

1.5 mΩ/□ at 25 μm fired film thickness

Solderability¹

SAC 305 at 245 °C
5 sec. dip, RMA flux
> 95 %

Adhesion¹

80 x 80 mil pad
SAC 305 at 245 °C
RMA flux
Initial: 5.0 lbs
Aged: 5.0 lbs (48hrs at 150 °C)

Viscosity

175 – 220 Kcps, Brookfield HBT
SC4 – 14 spindle and 6R cup at 10 rpm, 25 °C

Coverage

55 cm²/g at 25 μm fired film thickness

Wire Bonding

10 mil Aluminum Wire

Wire Bond Settings

Power: 350 mwatts
Time: 3.5 msecs

Solids

88.5 ± 1.5 %

Recommended Processing Guidelines

Printing

280 – 325 mesh stainless steel screen
0.2 – 0.5 mil emulsion
Allow to level at room temperature for 2 – 3 minutes

Drying

125 °C for 10 minutes

Firing Profile

Fire in Nitrogen with O₂ between 2 – 10 ppm
925 °C peak
Dwell time of 8 – 10 minutes
Typical rise time of 20 – 23 minutes
(measured from 100 °C entry point)
Total cycle time of 50 – 65 minutes

Line Resolution

≥ 4 mils (100 μm)

Thickness

Wet: 40 – 50 μm
Fired: 20 – 25 μm

Thinner

RV-507

Warranty

To be determined.

Storage

Store in a dry location at 5 – 25 °C.

DO NOT REFRIGERATE.

Allow paste to come to room temperature prior to opening. Spatulate well before using, as settling may have occurred during storage.

Technical Data Sheet



Fine Line, Wire Bondable Copper Conductor

Legend:

1) 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.

2) 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

Heraeus Electronics
Heraeus Deutschland GmbH & Co. KG
Heraeusstraße 12 – 14
63450 Hanau, Germany
www.heraeus-electronics.com

Americas
Phone +1 610 825 6050
electronics.americas@heraeus.com

China
Phone +86 21 3357 5457
electronics.china@heraeus.com

Asia Pacific
Phone +65 6571 7677
electronics.apac@heraeus.com

Europe, Middle East and Africa
Phone +49 6181 35 3069, +49 6181 35 3627
electronics.emea@heraeus.com