Heraeus

## 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

- Lead, cadmium and nickel free
- Exceptionally high conductivity
- Migration resistant

## Typical Properties

**Resistivity**
1.5 mΩ/☐ at 25 µm fired film thickness

**Solderability**[1]
SAC 305 at 245 °C
5 sec. dip, RMA flux
> 95 %

**Adhesion**[1]
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 ºC for 10 minutes

**Firing Profile**
Fire in Nitrogen with $O_2$ between 2 – 10 ppm
925 ºC peak
Dwell time of 8 – 10 minutes
Typical rise time of 20 – 23 minutes
(measured from 100 ºC 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.

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