

## Technical Information

# 4530 GOLD Thru-Hole/Edge Paint Conductor Paste

The thick film composition 4530 is a lightly alloyed gold paste, designed for pull through and edge paint applications. Its high solids and binder contents result in good adhesion to laser drilled hole walls, while providing low electrical resistance. Its rheology is optimized for pulling through small holes.

The 4530 is compatible with most conductors, dielectrics, and resistors. Key features of this product include:

- High Conductivity
- High Adhesion to Laser Drilled Holes.
- Low Shrinkage.

### TYPICAL FIRED FILM CHARACTERISTICS<sup>(1)</sup>

<b>Metallurgy</b>	Gold/Ag/Pd
<b>Resistivity</b>	< 10 milliohms/sq at 12 micron fired thickness

(1) Typical properties are based on testing of several batches under various processing conditions. They are not intended as specification limits.

### COMPOSITION PROPERTIES

<b>Viscosity:</b>	100 ± 20 Kcps, when measured with Brookfield HBT, Spindle #14, utility cup, 10 RPM, 25 °C.
<b>Solids Content:</b>	89.0 ± 1.5 %
<b>Specific Gravity:</b>	5.5 – 6.5 g/cm <sup>3</sup>
<b>Recommended Thinner:</b>	KOARTAN B-1194

## RECOMMENDED PROCESSING PROCEDURE

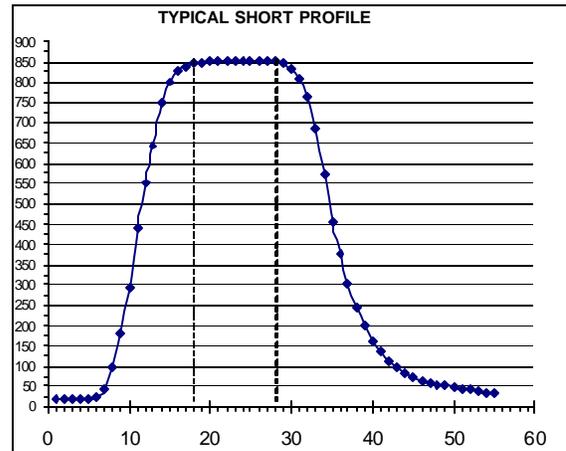
**Printing:** Printing with a 325 mesh stainless steel screen with 10-15  $\mu\text{m}$  emulsion and 45 degree angle is recommended. Other mesh counts, 230-250, and emulsion thicknesses, 5-25  $\mu\text{m}$ , may be used for special applications.

**Drying:** Wet prints should be allowed to stabilize for 5-10 minutes prior to drying. Dry for at least 15 minutes in a convection oven or belt dryer at 100°C-150°C.

**Firing:** Firing in air using a belt furnace and a 36-60 minute profile, with 10 minutes at a peak temperature of 850°C is recommended. Air flow rates must be optimized to ensure that the products of binder burn-off discharge properly and create a fully oxidizing atmosphere in the muffle.

**Application Notes:** It is generally a good practice to fire laser drilled substrates once prior the application of the thru-hole paste. The print area is recommended to be at least .001" larger than the hole diameter all around. A sufficiently strong vacuum should be applied to pull the ink through at

least 70% of the depth. The substrate is then turned over and the process is repeated.



**Storage and Shelf Life:** Store in tightly capped containers at room temperature. Shelf life is 6 months for unopened jars. Under ordinary conditions of storage and use the product should not require thinning. However, solvent loss during extended printing runs may be replaced by incorporating up to 0.5% of Koartan B-1194 thinner.

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