

## Technical Information

# 6130 SILVER PASTE

## For Thru-Hole & Edge Paint Applications

The 6130 silver paste was developed to provide a thin and highly conductive coating for the inside of holes and castellations in 96% alumina substrate. Its special binder system enables it to adhere to very smooth laser drilled surfaces. For plugging holes in the substrate please see KOARTAN 6540. The 6130 does not contain cadmium, lead,

nickel, or highly toxic organic solvents. Its key features include:

- RoHS Compliant
- High Conductivity
- Low Shrinkage
- Suitable for Laser-Drilled and As-Cast Holes

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

<b>Fired Thickness<sup>(2)</sup></b> Using 325 mesh screen	12-16 $\mu\text{m}$
<b>Resistivity<sup>(2)</sup></b> Milliohms/square at 12 $\mu\text{m}$ fired thickness	$\leq 2.50$

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

(2) Measured on .020" wide lines.

### COMPOSITION PROPERTIES

<b>Viscosity:</b> 120 $\pm$ 30 Kcps, when measured with Brookfield HBT viscometer, Spindle #14, utility cup, 10 RPM, 25°C
<b>Specific Gravity:</b> 4.0-4.5 g/cm <sup>3</sup>
<b>Recommended Thinner:</b> KOARTAN A-1039

## RECOMMENDED PROCESSING PROCEDURE

**Printing:** Printing with a 325 mesh stainless steel screen using 10-15  $\mu\text{m}$  emulsion and 45 degree angle is recommended. Other mesh counts, 200-325, and emulsion thicknesses, 5-25  $\mu\text{m}$ , may be used for special applications. Squeegee speeds of up to 6 inches/sec may be utilized.

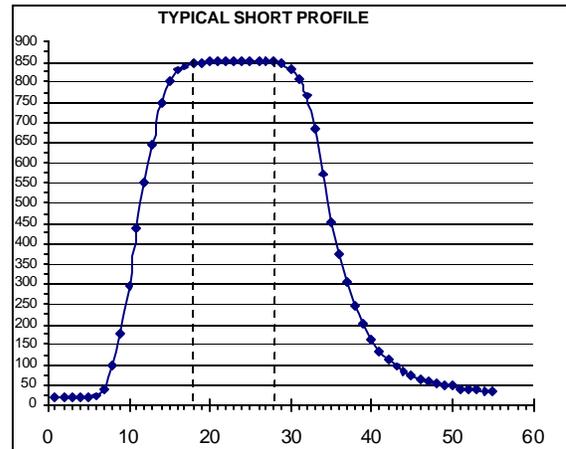
A vacuum pull-through fixture, including a porous stone to spread the vacuum evenly over the entire substrate is recommended. The porous stone should be protected from the paste by means of porous paper

**Drying:** Dry for 10-15 minutes in a convection oven or belt dryer at 125°C-150°C. Substrates should be laid on a porous board or mesh to allow solvent vapors to escape.

**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:** The 6130 paste has good flow characteristics and often coats the entire inside of holes in one printing. However, to ensure 100% coverage, it is recommended that after the first paste

application and drying a second application be made from the other side.



*Temperature (°C) vs. Time (minutes)*

**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 A-1039 thinner.