

Technical Information

6125 Thick-Print Silver Conductor

The thick-print silver paste 6125 is designed for applications requiring very low resistivity or high current carrying capability. Its high solids content and good flow allow the use of low mesh count screens to deposit 40-60 microns of fired film in one print, dry, and fire operation. It does not contain cadmium, nickel, lead, or

highly toxic organic solvents. Key features include:

- High Conductivity
- High Current Carrying Capability
- Thick Deposits in One Print
- Smooth Surface
- High Soldered Adhesion

TYPICAL FIRED FILM CHARACTERISTICS⁽¹⁾

Fired Thickness 80 mesh screen, .5-1 mil emulsion	40-60 μ m
Resistivity	\leq 0.80 milliohms / sq at 50 μ m fired thickness
Solder Acceptance⁽²⁾ 36/62/2 Sn/Pb/Ag, on 96% alumina	Excellent
Solder Leach Resistance⁽³⁾	2-3 Cycles
Adhesion⁽⁴⁾ Initial	> 22 N
48 Hours @ 150° C	> 18 N

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

(2) Excellent refers to nearly 100% coverage of both pads and lines after a 5-second dip in the solder bath at 225 +/-5°C, using Alpha 611 mildly activated flux.

(3) Cycles consist of 10-second dips in a 225 +/-5°C solder bath. Each cycle is preceded by dipping in Alpha 611 flux. The 6125 starts to de-wet after 2-3 cycles, but the film remains intact.

(4) The adhesion test consists of attaching 20 AWG tinned copper wire to .080"x.080" pads, by dipping in 225 +/-5°C solder for 5 seconds. The wires are then bent 90 degrees and pulled at constant speed, while a force gauge records the peel strength.

COMPOSITION PROPERTIES

Viscosity: 180 ± 40 Kcps, when measured with Brookfield HBT, Spindle #14, utility cup, 10 RPM, 25°C.

Specific Gravity: 4.8-5.2 g/cm³

Solids Content: 89 % \pm 1.5 %

Recommended Thinner: KOARTAN A-1039

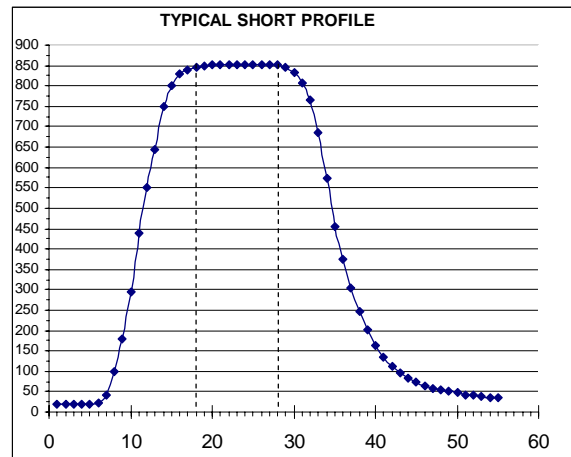
RECOMMENDED PROCESSING PROCEDURE

Printing: Printing with 80 mesh stainless steel screen using 0.5-1.0 mil emulsion and 45 degree angle is recommended. Other mesh counts, 60-325, and emulsion thicknesses, 5-25 μ m, may be used for special applications. Squeegee speeds of up to 8 inches/sec may be utilized.

Coverage is approximately 30-40 cm², when utilizing 80 mesh screen and a wet print thickness of about 80 μ m.

Drying: Wet prints should be allowed to level for 5-10 minutes prior to drying. Dry for 15-30 minutes in a convection oven or belt dryer at 125°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.



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 lost during extended printing runs may be replaced by incorporating up to 0.5% of Koartan A-1039 thinner.

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