KOARTAN
MICROELECTRONIC INTERCONNECT MATERIALS
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REV. 110112L

Technical Information

6250-1, 6250-2 Silver-Palladium Conductors

The thin-print silver-palladium conductor composition 6250-1 was designed primarily for coating the inside of very small holes in the substrate, or small castellations. The 6250-2 is a high viscosity version and allows the printing of pads or fine lines. These materials are ideal for applications where limiting the chemical interaction between the conductor and adjacent materials is critical. Both materials may also be fired as low as 600℃. They do not contain cadmium, lead, nickel, or highly toxic organic solvents. Key features include:

- RoHS Compliant
- Very Thin Fired Films
- Wide Firing Range
- Solderable
- Adhesion to Laser Drilled Holes
- Compatibility with Dielectrics, Resistors, and Thermistors

TYPICAL FIRED FILM CHARACTERISTICS(1)

Fired Thickness	~ 5 µm
Line Resolution 6250-2	175/125 µm line/space using 150/150 µm pattern and 325 mesh screen
Resistivity	40 -50 milliohm/square at 5 µm fired thickness
Solder Acceptance(2) 36/62/2 Sn/Pb/Ag, on 96% alumina	Excellent
Solder Leach Resistance(3)	1-2 Cycles
Adhesion(4) Initial	>8 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℃, using Alpha 611 mildly activated flux.
(3) Cycles consist of 10-second dips in a 225℃ +/- 5℃ solder bath. Each cycle is preceded by dipping in Alpha 611 flux.
(4) The adhesion test consists of attaching 20 AWG tinned copper wire to 2mmx2mm pads, by dipping in 225℃ +/- 5℃ 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:
6250-1 80 - 140 Kcps, when measured with Brookfield HBT viscometer, Spindle #14, utility cup, 10 RPM, @ 25℃
6250-2 220 - 280 Kcps, when measured with Brookfield HBT viscometer, Spindle #14, utility cup, 10 RPM, @ 25℃

Specific Gravity: 1.6 – 2.2 g/cm³

Recommended Thinner: KOARTAN A-1039

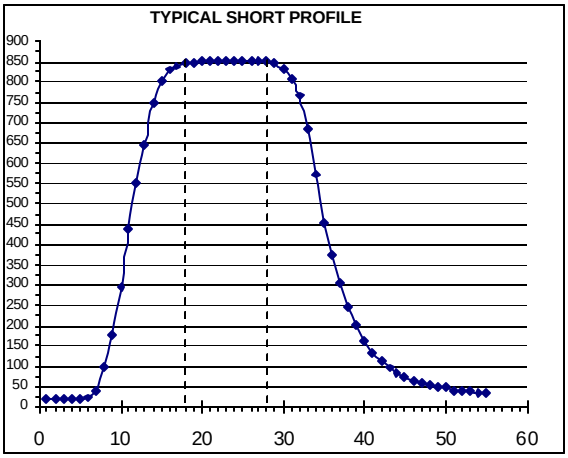
RECOMMENDED PROCESSING PROCEDURE

Printing: Printing with 325 mesh stainless steel screen using 10-15 µm emulsion and 45 degree angle is recommended. Other mesh counts, 200-325, and emulsion thicknesses, 5-25 µm, may be used for special applications. Squeegee speeds of up to 10 inches/sec may be utilized.

Coverage is approximately 140 cm^2/g, when utilizing 325 mesh screen and a wet print thickness of about 38 µm.

Drying: Wet prints should be allowed to level for 5-10 minutes prior to drying. Dry for 10-15 minutes in a convection oven or belt dryer at 125℃-150℃.

Firing: Firing in air using a belt furnace and a 36-60 minute profile, with 10 minutes at a peak temperature of 850℃ 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.



Temperature (℃) 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 corrected by incorporating up to 0.5% of Koartan A-1039 thinner.