



DUPONT™ 6118A

PLATEABLE SILVER CONDUCTOR FOR DUPONT™ 951 GREENTAPE™ LTCC

PRODUCT DESCRIPTION

DuPont™ 6118A is intended for use as a co-fired plateable (Ni/Au), external silver conductor for the DuPont™ GreenTape™ 951 low temperature co-fired ceramic system.

PRODUCT BENEFITS

- High conductivity
- Electroless Ni/Au plateability
- Cost reduction associated with plating VS gold thick film
- Wire bondable (1 mil Au wire) after plating*
- Brazeable (Au80/Sn20) after plating*
- Lead free and cadmium free**

*Appropriate plating conditions are required. Results may vary.

**Cadmium and lead “free” as used herein means that these are not intentionally added to the referenced product. Trace amounts, however, may be present.

PROCESSING

Compatibility

DuPont has tested this composition with the GreenTape™ 951 System. It is impractical to cover every combination of materials, customer processing conditions and circuit layout. It is therefore essential that customers thoroughly evaluate the material in specific situations to completely satisfy themselves with the overall quality and suitability of the composition for its intended application(s).

Printing

The composition should be thoroughly mixed prior to use. This is best achieved by slow, gentle, hand stirring with a clean, burr-free flexible, plastic spatula for 1 – 2 minutes. Care must be taken to avoid air entrapment.

Printing should be performed in a clean, well-ventilated area. Optimum printing characteristics are generally achieved in the room temperature range of 20 - 23°C. It is therefore important that the material, in its container, is at this temperature prior to printing. Printing thickness must be controlled at 15-22 microns dried for optimum performance. A 325 mesh stainless steel screen with 1.1 mil wire at 45 degree mesh angle with <0.5 mil emulsion is recommended.

Composition Properties

Test	Properties
Viscosity (Pa.S) [Brookfield RVT, 10rpm #14 spindle & UC, 25°C]	80-130
Solids (750°C) [%]	87.5 - 88.5
Thinner	DuPont™ 8250

Printing

Test	Properties
Dried thickness (microns)	15 - 22

Plated Performance*

Test	Properties
1 mil Au wire bonding 1000 hrs at 150°C [g] 1000 TCA (-40/125°C) [g]	>11 >11
Pin Brazing (80Au/20Sn) 1000 hrs at 150°C [pounds] 1000 TCA (-40/125°C) [pounds]	>15 >10

*Performance results above were obtained using laboratory test patterns after Ni/Au plating with 40-80 inch Au. These are not intended to be product specifications.

This table shows anticipated typical physical properties for DuPont™ 6118A based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Thinner

This composition is optimized for screen printing, however, thinning may be required periodically to replenish solvent loss due to evaporation.

Use the DuPont recommended thinner DuPont™ 8250 for slight adjustments to viscosity. The use of too much thinner or the use of non-recommended thinner may affect the rheological behavior of the material and its printing characteristics.

It is recommended to limit solvent replacement to <0.5 weight %. Viscosity should be tested prior to making further thinner additions.



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If >0.5 weight % thinner is needed to adjust viscosity to meet the recommended range, special care must be taken during subsequent processing steps. The paste solids level should also be tested to verify a minimum value of 87.0% (tentative).

Drying

Allow prints to level for 5-10 minutes at room temperature and then dry in a well-ventilated oven or conveyor dryer. Typical drying conditions can range between 80-120°C for 5-10 minutes.

Lamination

Laminate multiple sheets of DuPont™ GreenTape™ 951 printed with DuPont 6118A per the recommended process described in the 951 Design and Layout Guideline and the 951 product data sheet.

Firing

Consult the GreenTape™ 951 technical data sheet for firing details. Fire in a well-ventilated conveyor or static furnace. Air flows and extraction rates should be optimized to ensure that oxidizing conditions exist within the muffle. DuPont™ 6118A has been evaluated using a special DuPont 26 hour profile. Contact your DuPont technical representative for details.

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CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102-5 K-28937 (8/15)