**PRODUCT DESCRIPTION**

DuPont™ 6118A is intended for use as a co-fired silver plateable conductor for DuPont 951 and 9K7 GreenTape™ systems. DuPont™ 6118H is a blend member to adjust the viscosity of 6118A when needed.

**PRODUCT BENEFITS**

- High conductivity
- Electroless Ni/Au plateability
- Wirebondable (1 mil Au wire) after plating*
- Brazeable (Au80/Sn20) after plating*
- Lead free and cadmium free**

*Appropriate plating conditions are required. Results may vary.
**Lead and Cadmium “free” as used herein means that these are not intentionally added to the reference product. Trace amounts however may be present.

**PROCESSING**

**Compatibility**

DuPont has tested this composition with the GreenTape™ 951 and 9K7 Systems. 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.

**Typical Physical & Electrical Properties**

<table>
<thead>
<tr>
<th>Test</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6118A</td>
</tr>
<tr>
<td>Solids (%) @ 750°C</td>
<td>84 – 86</td>
</tr>
<tr>
<td>Viscosity [Brookfield RVT #1/4 Spindle; 10 RPM @ 25°C] (Pa.s)</td>
<td>80 – 130</td>
</tr>
<tr>
<td>Thinner DuPont™ 8250</td>
<td></td>
</tr>
</tbody>
</table>

**Plating Performance**

<table>
<thead>
<tr>
<th>Test</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mil Au wire bonding</td>
<td>&gt;11</td>
</tr>
<tr>
<td>1000 hrs at 150°C[g]</td>
<td>&gt;11</td>
</tr>
<tr>
<td>1000 TCA (-40/125°C)[g]</td>
<td>&gt;15</td>
</tr>
<tr>
<td>Pin Brazing (80Au/20Sn)</td>
<td></td>
</tr>
<tr>
<td>1000 hrs at 150°C[lbs]</td>
<td></td>
</tr>
<tr>
<td>1000 TCA (-40/125°C)[lbs]</td>
<td>&gt;10</td>
</tr>
</tbody>
</table>

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

This table shows anticipated typical physical properties for DuPont™ 6118A & 6118H 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.

**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 external tape layers printed with 6118A/H to multiple sheets of GreenTape™ using the recommended processing parameters outlined in the GreenTape™ Design Guideline and the 951 and 9K7 product data sheets. Typical lamination conditions are 3000 psi at 70°C for 10 minutes.
DUPONT™ GREENTAPE™ 6118A/6118H
LTCC SILVER PLATEABLE CONDUCTOR

Firing
Consult the GreenTape™ 951 and 9K7 technical data sheets for firing recommendations. Fire in a well-ventilated conveyor or static furnace with optimized air flows and extraction rates to ensure oxidizing conditions within the firing zone. 951 and 9K7 GreenTape™ requires a special 26-hour firing profile. Contact your DuPont technical representative for details.

Plating
Appropriate plating conditions are required and results may vary. Please contact DuPont technical service for more details and recommendations.

Brazing
A special profile with a peak temperature of 300°C for 5 minutes in nitrogen is recommended. Please contact DuPont technical for further details.

STORAGE AND SHELF LIFE
Container should be stored, tightly sealed, in a clean, stable environment at room temperature (<25°C). Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

SAFETY AND HANDLING
For Safety and Handling information pertaining to this product, read the Safety Data Sheet (SDS).

FOR MORE INFORMATION ON DUPONT™ GREENTAPE™ 6118A/6118H OR OTHER DUPONT MICROCIRCUIT MATERIALS PRODUCTS, PLEASE CONTACT YOUR LOCAL REPRESENTATIVE:

Americas
DuPont Photovoltaic and Advanced Materials
974 Centre Rd.
Chestnut Run Plaza 708
Wilmington DE 19805

Europe, Middle East & Africa
Du Pont (UK) Ltd
Coldharbour Lane
Bristol BS16 1QD
UK
Tel +44 117 931 3191

Asia
Du Pont Kubushiki Kaisha
MCM Technical Lab
DuPont Electronic Center
KSP R&D B213, 2-1,
Sakado 3-chome, Takatsu-ku,
Kawasaki-shi, Kanagawa, 213-0012
Japan
Tel +81 44 820 7575
DuPont Taiwan Ltd
45, Hsing-Pont Road
Taoyuan, 330
Taiwan
Tel +886 3 377 3616
DuPont China Holding Company Ltd
Bldg. 11, 39 Keyuan Road
Zhangjiang Hi-Tech Park
Pudong New District
Shanghai 201203
Tel +86 21 3862 2888

DuPont Korea Inc.
3-5th Floor, Asia tower #726
Yeoksam-dong, Gangnam-gu
Seoul 135-719, Korea
Tel +82 2 2222 5275

E.I. DuPont India Private Limited
7th Floor, Tower C, DLF Cyber Greens
Sector-25A, DLF City, Phase-III
Gurgaon 122 002 Haryana, India
Tel +91 124 409 1818

Du Pont Company (Singapore) Pte Ltd
21 Biopolis Road,
#06-21, Nucleus, South Tower,
Singapore 138567
Tel +65 6586 3022

advancedmaterials.dupont.com