**Product Description**
DuPont 5081 and DuPont 5082 braze systems constitute a two-component, all thick film paste system designed to facilitate the use of high-temperature solders and low-temperature braze alloys on:

- Low-temperature cofire ceramic
- Alumina
- Multilayer hybrid circuits

**Product Benefits**
When used with standard brazing preform or paste alloys, DuPont 5081 and DuPont 5082 offer the following benefits:

- High strength, high reliability attachment mechanism
- Hermetic packaging
- Compatibility with thick film resistors, as well as all conventional IC and lid attach processes

**Processing**

**DuPont 5081**
Print DuPont 5081 onto fired substrate using a 325 mesh, 0.5 mil emulsion screen.

Dry in air at 150°C for 15 - 20 minutes.

Fire using recommended profile. Total fired thickness should be 12~15μm.

**DuPont 5082**
Print DuPont 5082 directly on top of the fired DuPont 5081 print using a 280 to 325 mesh, 0.5 mil emulsion screen.

Dry in air at 150°C for 15 minutes.

Repeat previous print and dry step. Ensure DuPont 5082 completely covers the DuPont 5081 print.

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**Table 1**
<table>
<thead>
<tr>
<th>Typical Fired Properties</th>
<th>5081</th>
<th>5082</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness (μm)</td>
<td>12 - 15</td>
<td>≥ 20</td>
</tr>
<tr>
<td>Resistivity (mΩ/sq)</td>
<td>&lt;5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>PGA Reliability (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Cycle (b), N (lb)</td>
<td>65 (15)</td>
<td>65 (15)</td>
</tr>
<tr>
<td>Thermal Aging (c), N (lb)</td>
<td>65 (15)</td>
<td>65 (15)</td>
</tr>
<tr>
<td>Seal Ring Reliability (d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atm. cm³/s</td>
<td>&lt;10⁻⁸</td>
<td>&lt;10⁻⁸</td>
</tr>
</tbody>
</table>

**Table 2**
<table>
<thead>
<tr>
<th>Composition Properties</th>
<th>5081</th>
<th>5082</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coverage, cm²/g(a)</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>Viscosity, Pa·s @25°C</td>
<td>70 - 130</td>
<td>225 - 325</td>
</tr>
<tr>
<td>Thinner</td>
<td>DuPont 7502</td>
<td>DuPont 9180</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5081</th>
<th>5082</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinner</td>
<td>DuPont 7502</td>
</tr>
</tbody>
</table>

(a) Average tensile pull strength of a pin in a standard pin grid array (PGA) brazed to DuPont Green Tape™ 951. PGA consists of 1.8 mm diameter pad of DuPont 5081/DuPont 5082 and a 400μm diameter Kovar pin with a 800μm diameter nail head. 80Au/20Sn Braze preform
(b) 200 cycles, -40°C to +125°C.
(c) 200 hours in air at 150°C.
(d) Helium leak test to Kovar seal ring on Green Tape™ 951, 100 thermal cycles, -25°C to +85°C.
(e) At 25μm wet print thickness.

Table 1 and 2 show anticipate typical properties for DuPont 5081 and DuPont 5082 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of fire using recommended profile. Total DuPont 5082 fired thickness should be a minimum of 20μm. The thickness of the DuPont 5082 depends on the type of brazing alloy and brazing temperature used.
Storage and Shelf Life
Containers 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 Material Safety Data Sheet (MSDS).

Attachment
Once the substrate has been prepared with DuPont 5081 and DuPont 5082, pins, window frames, or heat sinks may be attached with braze alloy, performs, or pastes. Brazing is performed in a nitrogen or nitrogen/hydrogen atmosphere using fixtures that position the attachment and braze alloy directly on top of the DuPont 5081/5082 metallization. Specific application details are contained in the “Brazing Guidelines” data sheet.

For more information on DuPont 5081 & 5082 or other DuPont Microcircuit Materials products, please contact your local representative:

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