Heraeus’ newly developed low-activity SOL327 PERC tabbing paste helps PERC and floating bus bar designs to realize its higher efficiency and longer term reliability. SOL327 contains a specific glass chemistry, imparting controlled reaction between Ag paste and the dielectric layer, and offers at the same time, in combination with an optimized Ag system, higher aged adhesion on wafers with different morphology.

The SOL327 is designed to maximize the protection of the dielectric layer of PERC-cells from damage during metallization thus contributing to reduce electron recombination. Due to its unique features SOL327 Series shows higher Voc and improved cell efficiencies of 21+, in addition to excellent solderability and adhesion. It can be co-fired with commercially available PERC Aluminum paste.

**KEY BENEFITS**

- Higher efficiency on PERC from Voc gain
- Much less reactivity into the passivation and good compatibility with PERC AL paste
- Excellent adhesion and aged adhesion
- Wide soldering window, compatible with PERC
- Wide product portfolio with different Ag content:
  - SOL327A solid range 68±2%
  - SOL327B solid range 62±2%
BEETR PROTECTED PASSIVATION LAYER FOR HIGHER CELL EFFICIENCY

Especially for the SOL327 Series, Heraeus has developed a new glass formulation and paste additives, which helps to minimize defects on the emitter during the metallization process. The low reactivity results in less fire-through/penetration into the passivation and offers in combination with the controlled Ag/glass interaction for higher adhesion and higher aged adhesion. It has good solderability with different solder ribbon, under wide range of soldering temperatures (from 280 to 420 °C shown in the Figure). With these properties, SOL327 Series enables higher cell efficiencies of 21+%, improved Voc as well as module reliability.

SOL327 Series offers improved Voc

![Figure 1: SOL327 shows ~3 mV Voc increase compared to a control paste](image)

TYPICAL PROPERTIES

<table>
<thead>
<tr>
<th>Wafer types:</th>
<th>SOL327A: solid 68 +/- 2 %</th>
<th>SOL327B: solid 62 +/- 2 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid content:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity:</td>
<td>60 – 150 kcps</td>
<td>CPE-51 spindle, @ 1 RPM, 25°C</td>
</tr>
<tr>
<td>Fineness of Grind (FOG):</td>
<td>4th scratch: ≤ 12 μm</td>
<td>50%: ≤ 8 μm</td>
</tr>
</tbody>
</table>

RECOMMENDED PROCESSING GUIDELINES

Printing: Stainless steel screen:
230 to 360 mesh, 16 – 36 μm wire

Drying: Typically dried in an IR dryer with set points of
250 – 300°C in less than 20 seconds

Firing:
IR Furnace with Actual Wafer Peak Temperature at
740 – 800°C profile

Contact your AE partner for individual advice...

Storage:
DO NOT REFRIGERATE.
Store in a dry location at 5°C – 25°C. Allow paste to come to room temperature prior to opening. Spatulate well before using.

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