

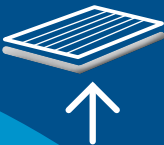
SOL326 Series



efficiency

Patent Pending

BACK-SIDE PASTE



New Generation PERC Back-side Tabbing Paste

- For PERC solar cells

Heraeus' newly developed low-activity tabbing paste SOL326 Series enables PERC and floating busbar design cells to realize their full efficiency potential and to achieve longer term reliability. SOL326 Series contains a specific glass chemistry, imparting controlled reaction between silver paste and the dielectric layer, and offers at the same time, in combination with an optimized silver system, higher aged adhesion on wafers with different morphology.

The SOL326 Series has been 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 SOL326 Series shows higher Voc and improved cell efficiencies of 20+ %, in addition to excellent solderability and adhesion. It can be co-fired with commercially available back-side Al and front-side Ag pastes.

KEY BENEFITS

- 20+ % efficiency
- Low activity, less fire through SiNx and Al₂O₃/SiO_x passivation layer
- Excellent adhesion and aged adhesion
- Co-fireable with back-side Al and front-side Ag pastes
- Ease of printability
- Cd and Pb free*

BETTER PROTECTED PASSIVATION LAYER FOR HIGHER CELL EFFICIENCY

Exclusively for the SOL326 Series, Heraeus has developed in-house a new glass composition, the key enabler for the excellent performance of the paste. Also, Heraeus has developed in-house a new concept for 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, higher adhesion and higher aged adhesion. With these properties, SOL326 Series enables increased cell efficiencies of 20+%, improved Voc, as well as higher module reliability.

SOL326 Series offers improved Voc

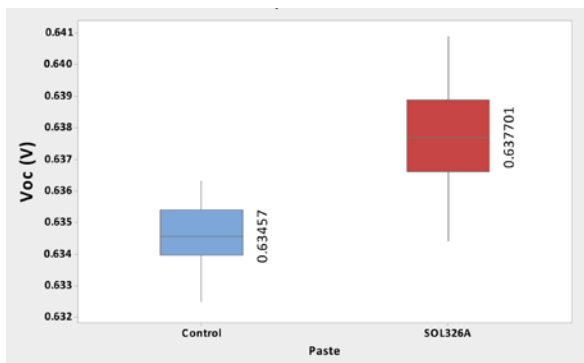


Figure 1: SOL326A shows 3 mV Voc increase compared to a control paste.

SOL326 Series offers great aged adhesion

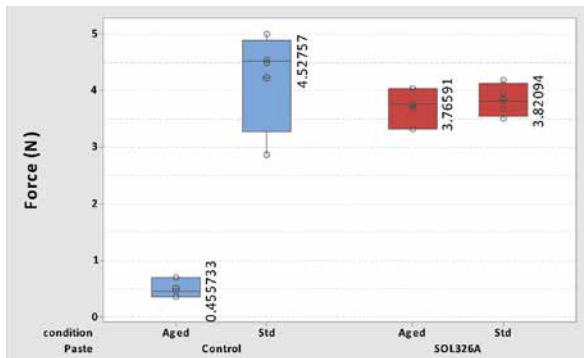


Figure 2: SOL326A shows excellent adhesion and aged adhesion, compared to a control paste with very low aged adhesion

TYPICAL PROPERTIES

Wafer types:

- Monocrystalline
- Multicrystalline

Solid content:

SOL326A: solid 68 +/-1.5 %
SOL326B: solid 62 +/-1.5 %

Viscosity:

60–150 kcps
 CPE-51 spindle, @ 1 RPM, 25°C

Fineness of Grind (FOG):

4th scratch: ≤ 12 μm
 50%: ≤ 8 μm

RECOMMENDED PROCESSING GUIDELINES

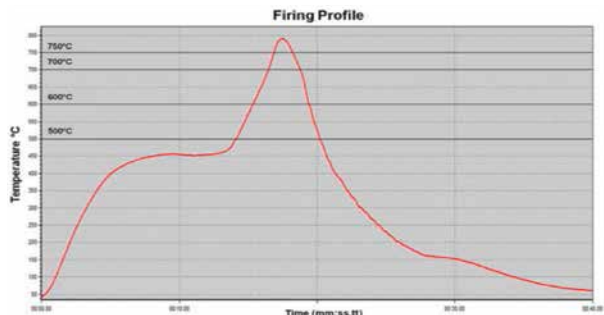
Printing: Stainless steel screen:

230 to 360 mesh, 16–36 μm wire
 EOM thickness: 5–15 μm EOM

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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