

# SOL327 Series



*efficiency*

Patent Pending

BACK-SIDE PASTE



## New Generation PERC Back-side Tabbing Paste

- For PERC solar cells

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  $68 \pm 2\%$   
SOL327B solid range  $62 \pm 2\%$

## BETTER 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

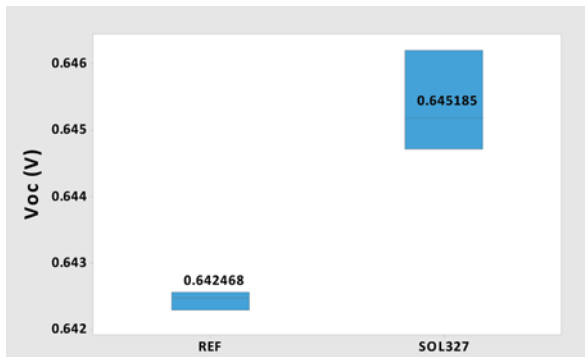


Figure 1: SOL327 shows ~3 mV Voc increase compared to a control paste

### SOL327 has wide soldering window and great aged adhesion

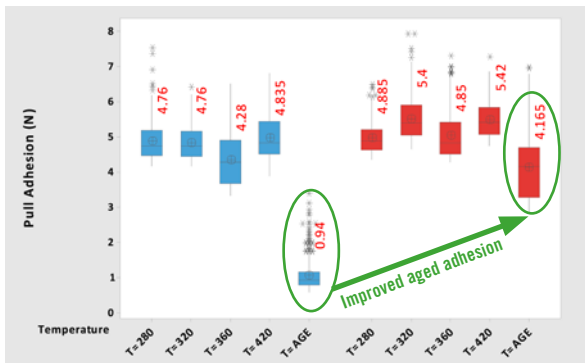


Figure 2: SOL327 showed good adhesion and aged adhesion, compared to a control paste with very low aged adhesion

## TYPICAL PROPERTIES

### Wafer types:

- Monocrystalline PERC
- Multicrystalline PERC

### Solid content:

- SOL327A:** solid 68 +/- 2%
- SOL327B:** solid 62 +/- 2%

### 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:

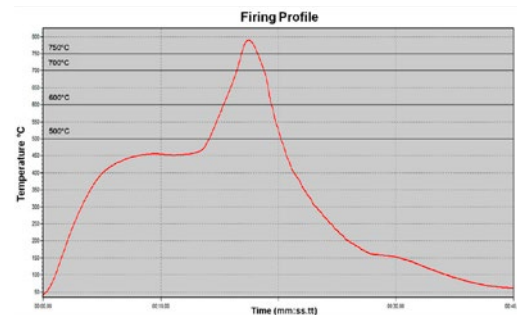
230 to 360 mesh, 16–36 μm wire

### 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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