

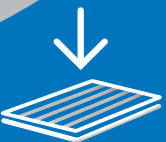
# SOL6700B Series



*efficiency*

Patent Pending

DUAL PRINTING BUSBAR PASTE



## New Generation Dual Printing Busbar Paste

- Design for Dual Printing with low laydown
- Less reactivity into the passivation SiNx and AlOx/SiNx
- Excellent adhesion and wide soldering window

Heraeus' newly developed SOL6700 dual printing busbar paste helps to realize higher efficiency and lower manufacturing costs of solar cells. SOL6700 contains a specific glass chemistry, imparting controlled reaction between Ag paste and the dielectric layer. At the same time, because of separate printing of busbar and finger paste, it does not need to consider the height of the busbar area, and allow to do more optimization on screen, to reduce the usage of the silver paste. The SOL6700 is designed to maximize the protection of the dielectric layer of cells from damage during metallization thus contributing to reduce electron recombination and improving the open-circuit voltage. Especially matching with mainstream finger paste on the market at present, can further improve the efficiency when combined with UFL screen printing technology. SOL6700 series, moreover, can be compatible with a variety of mainstream cell technology at present, including Mono/ Multi PERC, Double Passivation, Double Passivation+SE, N-type, MCCE and so on.

### KEY BENEFITS

- Design for Dual Printing with low laydown
- Less reactivity into the passivation SiNx and AlOx/SiNx
- Excellent adhesion and wide soldering window
- Reduce the manufacturing cost of silicon solar cells
- Compatible with all kinds of mainstream cell technology
- No Cd and Pb

## HIGHER CELL EFFICIENCY AND LESS DEPOSIT

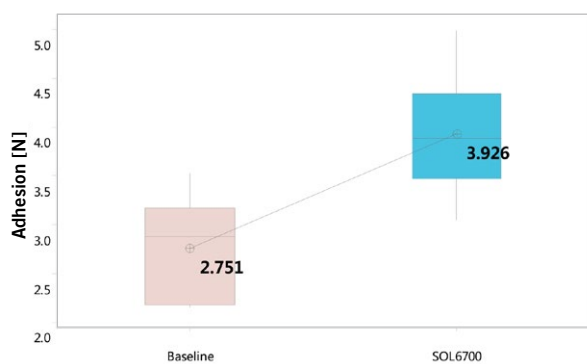
Especially for the SOL6700 Series, Heraeus has developed a new glass formulation and paste additives, which helps to minimize defects on the emitter during the metallization process. The low reactivity results in less fire-through/ penetration into the passivation and offers in combination with the controlled Ag/glass interaction for higher adhesion and higher aged adhesion. With these properties, SOL6700 Series enables higher cell efficiencies of +22%, improved Voc as well as module reliability.

### SOL6700 offers improved Voc

Paste	$\Delta$ EFF [%]	$\Delta$ Voc [mV]	$\Delta$ Isc [A]	$\Delta$ FF [%]	$\Delta$ Rs [m $\Omega$ ]	$\Delta$ Rsh [ $\Omega$ ]	$\Delta$ Deposit [mg]
(SOL6600B + Finger) – (DB package)	0.04	0.7	15	-0.06	0.12	-35	-10

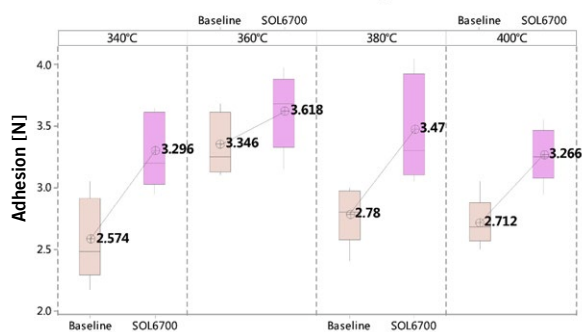
SOL6600B showed 0.7 mV Voc increase compared to DP

### SOL6700 shows excellent adhesion window



Source is from customer side

### SOL6700 shows wide soldering window



SOL6700B showed wide soldering compared to a control paste

## TYPICAL PROPERTIES

### Wafer types:

- Mono crystalline
- Multi crystalline
- N-type

**Solid content:** 86 ± 1.5 %

### Fineness of Grind (FOG):

- 4th scratch: ≤ 12 μm
- 50%: ≤ 8 μm

### Viscosity:

CPE-51 spindle, (Brookfield):

70–150 kcps @ 1 RPM, 25°C

## RECOMMENDED PROCESSING GUIDELINES

### Printing: (Stainless steel screen):

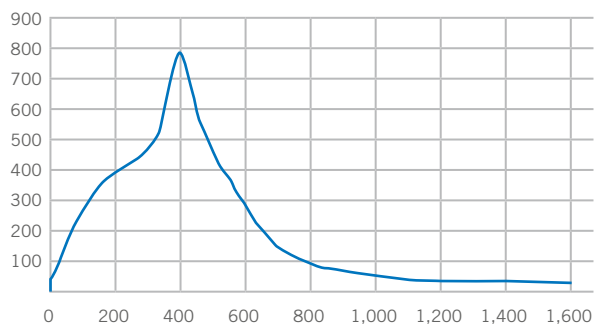
360 mesh

16 μm wire

### EOM thickness: ≤ 10 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.



### Storage:

Store in a dry location at 5°C–25°C.

Stir well before using.

Contact your Application Engineering Team partner for individual advice.

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