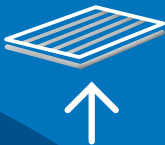


# SOL6600 Series



*efficiency*

DUAL PRINTING BUSBAR PASTE



## New Generation Dual Printing Busbar Paste

### ■ Design for dual printing

Heraeus' newly developed SOL6600 dual printing busbar paste helps to realize its higher efficiency and lower manufacturing costs of solar cells. SOL6600 contains a specific glass chemistry, imparting controlled reaction between Ag paste and the dielectric layer. At the same time, on account 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 SOL6600 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 knot-less screen printing technology. SOL6600 series, moreover, can be compatible with a variety of mainstream cell technology at present, including MCCE, DWC, mono PERC, and so on.

### KEY BENEFITS

- Higher efficiency
- Less reactivity into the passivation SiNx and Al<sub>2</sub>O<sub>3</sub>/SiO<sub>x</sub>
- 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 SOL6600 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, SOL6600 Series enables higher cell efficiencies of 21+ %, improved Voc as well as module reliability.

### SOL6600 offers improved Voc

Paste	EFF [%]	Voc [mV]	Isc [A]	FF [%]	Rs [mΩ]	Rsh [Ω]	Deposit [mg]
DP(A+A)	20.36	646.7	9.473	81.19	1.22	343	113
SOL6600B+ Finger	20.39	647.7	9.495	80.99	1.34	308	102

Table 1: SOL6600B showed ~1 mV Voc increase compared to DP

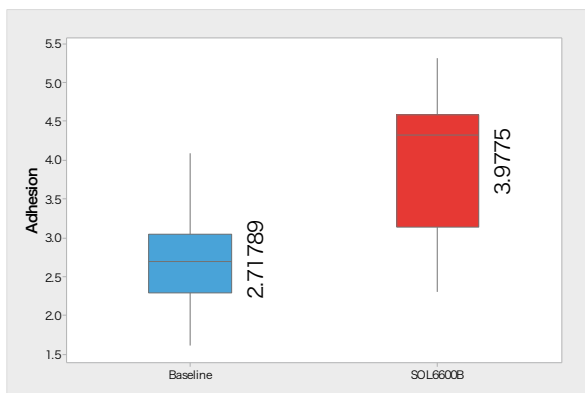


Figure 2: SOL6600B showed good adhesion compared to dp paste (Baseline)

### SOL6600 has wide soldering

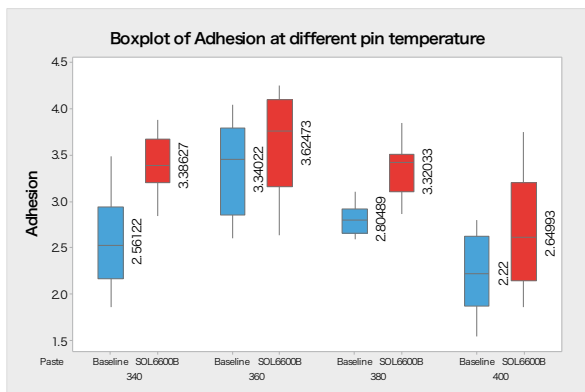


Figure 3: SOL6600B showed wide soldering compared to a control paste with.

## TYPICAL PROPERTIES

### Viscosity:

- SOL6600B: 230–360 kcps
- SOL6600B1: 80–200 kcps
- CPE-51 spindle, @ 1 RPM, 25°C

### Solid Content:

- SOL6600B: solid 84 +/1.5 %
- SOL6600B1: solid 76 +/1.5 %

### Soldering Conditions:

- Sn/Pb/Ag 62/36/2
- Sn/Pb 60/40
- Use with low solids, no clear flux

### Wafer types:

- Monocrystalline
- Multicrystalline

### Fineness of Grind (FOG)

- 4th scratch: ≤ 10 μm
- 50 %: ≤ 5 μm

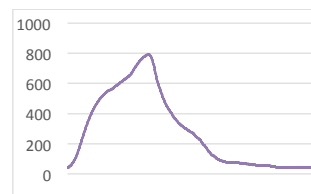
## RECOMMENDED PROCESSING GUIDELINES

### Printing (Stainless steel screen):

- 325 mesh
- 23 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



Contact your AE partner for individual advice...

### Firing:

- IR Furnace with Actual Wafer Peak Temperature at 780–840°C profile

### Storage:

Store in a dry location at 5°C–25°C.

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