Heraeus

SOL9671B Series

SOL9671B
> 0.05 %
Eta gain

efficiency

Patent Pending

FRONT-SIDE PASTE

New Generation Front Side Silver Paste For PERC+SE

- **Ultra-fine-line screen printing**
- **Superior metallization on ULDE plus SE**
- **Suitable for Single print and Dual Print finger**

The Heraeus SOL9671B series front side silver paste was specially designed for ULDE (Ultra Lightly Doped Emitter) plus SE (Selective Emitter). SOL9671B series are based on the glass chemistry upgraded from the last generation to offer superior metallization contact on ULDE plus SE, combined with the latest improvement in organic vehicle system for UFL(Ultra-Fine-Line) printing.

SOL9671B has a wide firing window toward lower temperature side, which makes the series well-performed on PERC solar cells, meanwhile, superior UFL printing ability gives more space to customer to reduce laydown and improve efficiency. It is worth mentioning that the SOL9671B platform is suitable for SP and DuP which allows our customers more choice of printing method.

KEY BENEFITS

- Ultra-Fine-line screen printing
- Superior metallization for both Single print and Dual print
- Low laydown and high adhesion
- High VOC, extra protection on laser damaged Selective Emitter
- Low firing temperature and wide contact window can further reduce LeTID
- Perfect compatibility with multi Busbar printing

SUPERIOR ULTRA-FINE-LINE PRINTABILITY

The SOL9671B is perfectly tailored for Ultra-fine-line printability for screen printing. It supports a finger geometry that can print defect-free through a less than 22 µm screen opening in high throughput mass production. Meanwhile, SOL9671B is suitable for SP and DuP which allows our customer more choice for printing method.

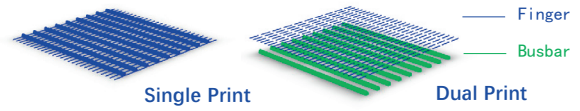


Fig1. SOL9671B is suitable for SP and DuP

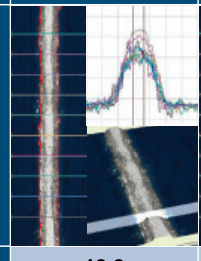
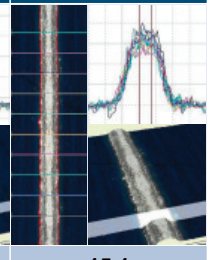
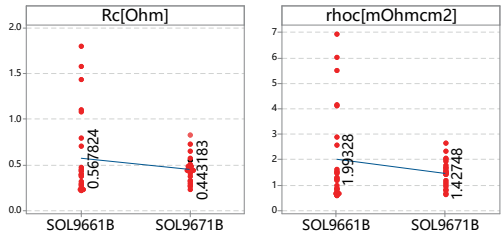
	Reference	SOL9671B
Morphology		
Height[um]	13.9	15.1
Width[um]	35.9	33.7
AR[%]	38.7	44.8

Fig2. Test on 480/11-24um opening screen

UNIQUE PASTE CHEMISTRY DESIGNED FOR SELECTIVE EMITTER PERC CELL

Continued innovation from last generation, SOL9671B features a unique glass frit and silver combination, enabling the tolerance of wide firing temperatures and emitter protection. SOL9671B successfully overcome the challenge of contacting ULDE (~ 10^{-19} dopant concentration) and ensure the less damage under laser-processed SE area. Such features bring out the most benefits to ULDE, such as higher Isc and Voc, therefore boosts the cell efficiency.



Wafer: Mono PERC+SE (High doping region 100Ω/□)

Fig3. SOL9671B has Better Contact Performance than SOL9661B

TYPICAL PROPERTIES

Wafer types:
- Mono crystalline PERC or regular Mono
- Mono crystalline PERC with SE

Solid content: 91 ± 1 %

Fineness of Grind (FOG):
- 4th scratch: ≤ 12 µm
- 50 %: ≤ 8 µm

Viscosity:
DV3T-14 spindle (Brookfield):
150 – 250 kcps @ 20 RPM, 25°C

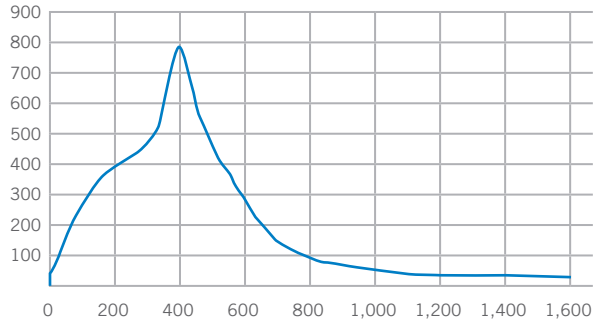
RECOMMENDED PROCESSING GUIDELINES

Printing:
Single Print: 480/11 ≤ 26 µm opening; 430/13 ≤ 28 µm opening
Dual Print:480/11 ≤ 26 µm opening; 430/13 ≤ 28 µm opening

EOM thickness: ≤ 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.



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.

*Contact your Application Engineering Team partner for individual advice.

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