

SOL9661B2 Series

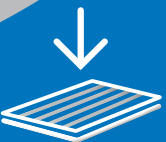


SOL9661B2
> 0.10 %
Eta gain

efficiency

Patent Pending

FRONT-SIDE PASTE



New Generation Front Side Silver Paste for PERC

- Specially designed paste for “Double Passivation” PERC cell
- High FF, Ultra-Fine-line printability for better efficiency
- Single, Dual and Double printing package available for efficiency boost

As different passivation technologies were matured in PERC process, such as PECVD (Plasma Enhanced Chemical Vapor Deposition) and ALD (Atomic Layer Deposition), the Alumina oxide and Silicon nitride layers are intentionally (double passivation) or unintentionally (wrap-deposition) stacked on the front-side of silicon solar cell. This has given FS paste more challenges.

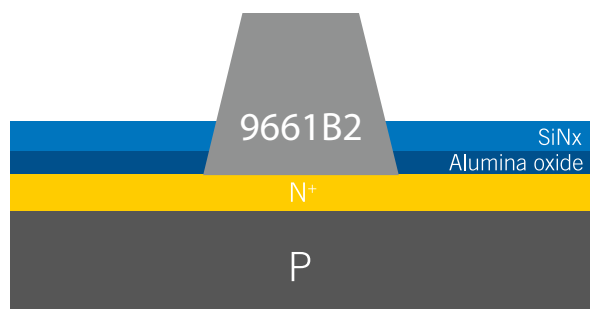
Heraeus, the technology leader, closely following the industry trend, has developed the SOL9661B2 series based on the paste chemistry specially designed for stack passivation PERC cell. As confirmed by customers, SOL9661B2 single printing, dual printing and double printing packages provide efficiency gain > 0.10% in mass production. Such paste chemistry provides a wide firing window toward lower temperature side, which makes this series well-performed on PERC and SE-PERC cells.

KEY BENEFITS

- Specially designed paste for “Double Passivation” PERC cell
- High FF, Ultra-Fine-line printability for better efficiency
- Single, Dual and Double printing package available for efficiency boost
- Wide process window
- Allows quick and efficient customization

UNIQUE PASTE CHEMISTRY DESIGNED FOR STACK PASSIVATION PERC CELL

Continued innovation from last generation, SOL9661B2 features a unique patent pending glass frit and silver combination, enabling penetration of stack passivation layers. SOL9661B2 also successfully overcomes the challenge of contacting ULDE (~ 10–19 dopant concentration) and also ensures the less passivation damages. Such features bring out the most benefits of ULDE, such as higher FF and Voc and therefore boosts the PERC cell efficiency.



FURTHER IMPROVED ULTRA-FINE-LINE PRINTABILITY

SOL9661B2 is perfectly tailored for Ultra-fine-line printability for screen printing. It supports a finger geometry that can print defect-free through a 28 µm screen opening in high throughput mass production in single, dual and double printing.

Wafer	PERC Mono with ALD Stack Passivation	
Screen	360/16 Mesh – 32 µm Opening	
Paste	9661B2	
Screen Printing	Deposit/Pcs [mg]	+4
	ΔFired L.W. [µm]	2
	ΔFired L.H. [µm]	+0
	ΔFired A.R. [%]	+5
	ΔPrint speed [mm/s]	same
Electrical Performance	ΔEff [%]	+0.11
	ΔVoc [mV]	+1.0
	ΔIsc [mA]	+33
	ΔFF [%]	+0.10
	ΔRs [mΩ]	-0.0001
	ΔRsh [Ω]	+13

TYPICAL PROPERTIES

Wafer types:

- Mono PERC with stack passivation
- DWC-Additive or MCCE

Solid content: 91.00±1%

Fineness of Grind (FOG):

- 4th scratch: ≤ 12 µm
- 50%: ≤ 8 µm

Viscosity:

CPE-51 spindle (Brookfield):
50–120 kcps @1 RPM, 25°C

RECOMMENDED PROCESSING GUIDELINES

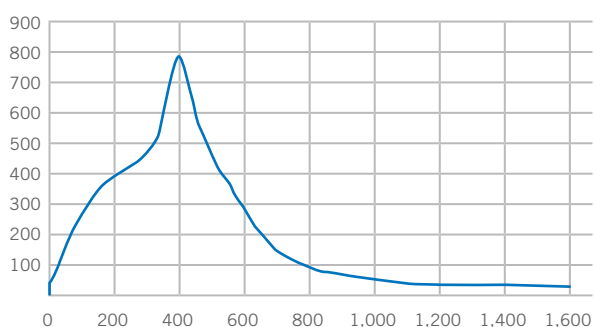
Single Print: 480/11 ≤ 26 µm opening;
430/13 ≤ 28 µm opening

Dual Print: 480/11 ≤ 26 µm opening;
430/13 ≤ 28 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 or 150–200°C for 10 minutes in circulated air oven.

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.

EUROPE (GERMANY)

Heraeus Deutschland GmbH & Co. KG
63450 Hanau
pv.hde@heraeus.com

AMERICA (USA)

Heraeus Precious Metals North America Conshohocken LLC/Heraeus Incorporated
19428 W. Conshohocken
Phone +1 610 825-6050
pv.hpmc@heraeus.com

ASIA (TAIWAN)

Heraeus Materials Technology Taiwan Ltd.
11492 Taipei
Phone +886 2 2627 1111
pv.hmtt@heraeus.com

ASIA (KOREA)

Heraeus Korea Corporation
16506 Suwon-si
(Gyeonggi-do)
Phone +82 31 270 9428
pv.hmk@heraeus.com

ASIA (CHINA)

Heraeus Materials Technology Shanghai Ltd.
201108 Shanghai
Phone + 86 21 3357 5688
pv.hmts@heraeus.com

ASIA (JAPAN)

Heraeus K. K.
112-0012 Tokyo
Phone +81 3 6902 6564
pv.hkk@heraeus.com

ASIA (SINGAPORE)

Heraeus Materials Singapore Pte. Ltd.
639335 Singapore
Phone +65 6571 7888
pv.hmsl@heraeus.com

Visit us online:

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