

SOL7200 Series

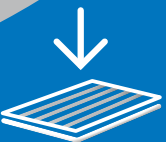


SOL7200
for
TOPCon

efficiency

Patent Pending

TOPCON PASTE



New Generation Silver Paste for TOPCon

- Specifically designed for N-type cells with TOPCon on rear
- Fire through paste for high temperature passivated contact
- Very low metal induced recombination leading to higher Voc

The SOL7200 paste has been developed based on our brand-new glass chemistry, combined with the latest breakthrough in organic vehicle system for fire through contact of TOPCon layers. SOL7200 enables lower firing temperatures to reduce the impact of metal induced recombination and maintain high cell Voc while also providing excellent contact resistance.

SOL7200 has a wide firing window, and can be fired at low temperatures, which makes the paste especially suitable for the application on TOPCon (Tunnel Oxide Passivated Contact) solar cells. The paste is also specifically designed for the rear side of the solar cell with the advantage of high green strength and is compatible with Heraeus SOL9370 and SOL9380 n-type front side pastes.

Please contact our local technical service teams for detailed progress recommendations.

KEY BENEFITS

- Specifically designed for N-type cells with TOPCon on rear
- Fire through paste for high temperature passivated contact
- Very low metal induced recombination leading to higher Voc
- Wide process window
- Lower firing temperature
- Suitable for rear side of solar cells

LOW TEMPERATURE FIRING TOPCON PASTE

The SOL7200 pastes feature a unique glass chemistry, in which > 45 years of experience and expertise in glass development for the thick film paste industry are incorporated. This key ingredient, exclusively developed and manufactured by Heraeus, enables low firing temperatures, which is key to achieving very high Voc on the finished solar cell. At the same time and due to the contact properties of this paste, excellent specific contact resistivity is achieved even when fired at lower temperatures. After low temperature firing the microstructure of the fired finger shows very little damage to the Poly Si layer leaving the thin tunnel oxide undisturbed.

The SOL7200 paste is perfectly tailored for screen printing on the rear side of the solar cell where shading is not a primary concern. By taking advantage of the rear side application, the paste is optimized for best contact properties while also ensuring that material usage is consistent with low cost solar cell manufacturing requirements. By enabling the combination of excellent contact and minimum metal induced recombination, SOL7200 provides a path of commercializing TOPCon technology in high volume manufacturing.

Efficiency



Voc



TYPICAL PROPERTIES

Wafer types:

- Monocrystalline TOPCon

Solid content: 75.00±1.0%

Fineness of Grind (FOG):

- 4th scratch: ≤ 10 μm
- 50%: ≤ 5 μm

Viscosity:

CPE-51 spindle (Brookfield):
200–250 kcps @ 1 RPM, 25°C

Recommended finger opening:

- Single/Dual Print: ≤ 34 μm
- Double Print: to be optimized based on customer case

RECOMMENDED PROCESSING GUIDELINES

Printing: Screen parameter recommendations with stainless steel screen:

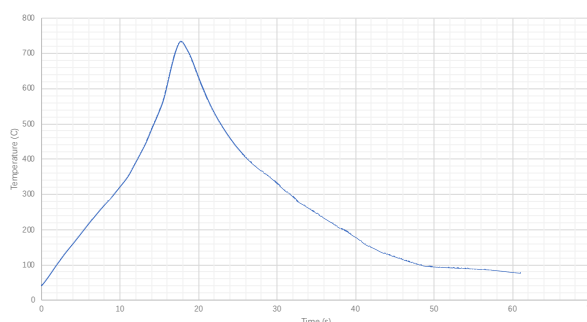
≤ 34 μm opening:

- calendared 360 mesh, 16 μm or
- calendared 380 mesh, 14 μm or
- calendared 430 mesh, 13 μm

EOM thickness: 10–20 μm

Drying: Typically dried in an IR dryer with set points of 250–300°C in less than 30 seconds or 150–200°C for 10 minutes in circulated air oven.

Firing: A typical firing profile for N-type TOPCon cell.



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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