Heraeus

SOL580 Series

SOL580
> +0.05 %
Eta gain

efficiency

Patent Pending

FRONT-SIDE PASTE

New Generation Low Temperature Silver Paste

- **Ideal for both HJT and OPV standard cells**
- **For single and double printing application**

The SOL580 has been developed based on our recent improvement in low curing temperature paste chemistry, combined with the latest breakthrough in silver powder development and organic design. As confirmed by internal results SOL580 has outstanding resistivity and improved adhesion on HJT cells.

SOL580 has a low curing temperature (180 – 200 °C) and allows for low resistivity values on HJT (Heterojunction with Intrinsic thin layer) solar cells. At the same time, the paste shows excellent adhesion.

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

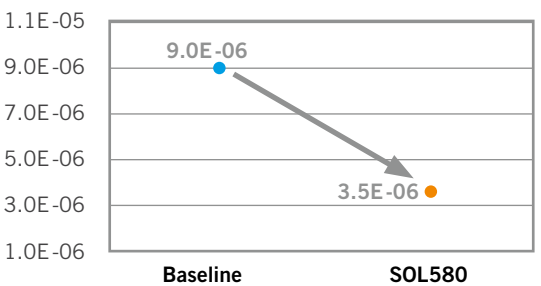
KEY BENEFITS

- For outstanding efficiency gain
- Fine-line screen printing for mass production
- Excellent adhesion and solder ability
- Excellent resistivity values with a low curing temperature
- Can be stored at room temperature

IMPROVEMENT ON VOLUME RESISTIVITY, PRINTING AND LINE ASPECT RATIO

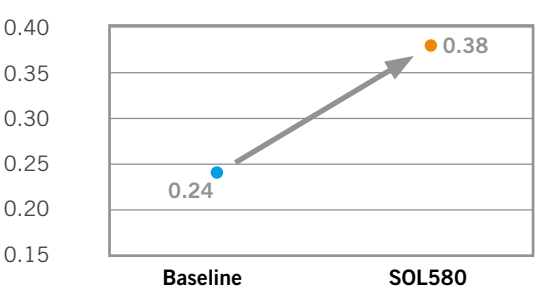
The SOL580 features a unique silver chemistry, which allows for improved resistivity values. The key is that this paste allows for improved sintering of the silver at low curing temperatures. The SOL580 is perfectly tailored for fine-line printability for screen printing. It supports a finger geometry that can print defect-free through a less than 35 µm screen opening in high throughput mass production, resulting in an efficiency gain through reduced optical shading and reduced volume resistivity.

Volume Resistivity

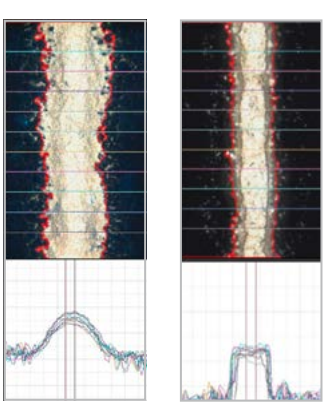


Volume Resistivity Improvement in SOL580

Line Aspect Ratio



Line Aspect Ratio Improvement in SOL580



Baseline *SOL580*

TYPICAL PROPERTIES

Wafer Application types:

- HJT
- OPV

Recommended finger opening:
Single Print: 30–35 µm

Recommended curing temperature:

- 200 °C for 10–30 min

Recommended storage condition:

- < 25 °C (Controlled Humidity)

Solid content: 92.5 ± 1.0 %

Fineness of Grind (FOG):

- 4th scratch: ≤ 15 µm
- 50 %: ≤ 8 µm

Viscosity:
SOL580: CPE-51 spindle (Brookfield):
50–150 kcps @ 1 RPM, 25 °C

RECOMMENDED PROCESSING GUIDELINES

Printing: Screen Parameter Recommendations with Stainless Steel Screen:
≥ 30–40 µm opening:
calendared 360 mesh, 16 µm

- EOM thickness: 12–20 µm

Curing: Typically cured in a circulated air oven furnace with set points of 180–200 °C in 10–30 minutes

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.

Room-temp storage
The SOL580 has the important characteristic that it can be kept at room temperature and not degrade over a 6 month period.

HPT/E/VN/12.2018 Layout: www.data-graphis.de

EUROPE (GERMANY)
Heraeus Deutschland GmbH & Co. KG
63450 Hanau
Phone +49 6181 35 5051
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.
33855 Luzhu (Taoyuan)
Phone +886 3 321 9937
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

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