

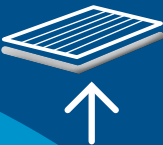
SOL205B



efficiency

Patent Pending

BACK-SIDE PASTE



High Reliability Back-side Tabbing Paste

- for mono- and multicrystalline c-Si solar cells

The Heraeus SOL205B is a back-side tabbing paste for mono- and multi-crystalline solar cells from our successful SOL205 Series. Formulated for enhanced busbar and therefore module reliability, the SOL205B demonstrates great adhesion and aged adhesion strength.

The paste can be printed at high speeds for high throughput processing and enables uniform printing for a variety of busbar designs. A low solids and silver content, in conjunction with low paste deposit, allows cell manufacturers to achieve an optimal cost-performance ratio.

SOL205B can be co-fired with commercially available back-side Al and all Heraeus front-side pastes.

KEY BENEFITS

- Excellent adhesion and aged adhesion
- Ease of printability
- Excellent performance-to-cost ratio

IMPROVED AGED ADHESION AND PERFORMANCE

Heraeus recognizes that modules experience a variety of harsh settings, and the need for adhesion is critical for all of them. That is why Heraeus' SOL205B is the ideal back-side tabbing paste for high temperature environments. Our scientists have developed a high performance chemistry that provides an advanced reliability thereby maintaining high adhesion after simulated ageing (See Figure 1).

SOL205B High Aged Adhesion Relative to SOL205Y

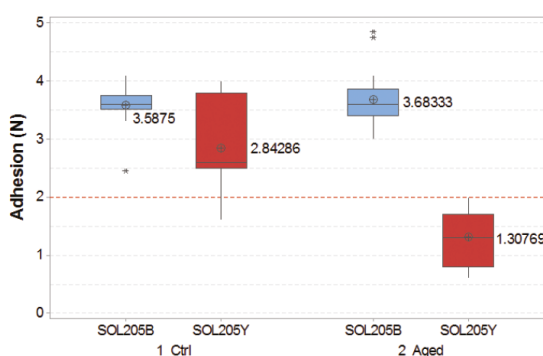


Figure 1: The advanced chemistry of Heraeus' SOL205B busbars maintains their high adhesion relative to our SOL205Y. Ageing was performed at 150°C for 30 minutes using segmented busbars.

HIGH ADHESION ACROSS A BROAD PROCESSING WINDOW

The SOL205B provides cell manufacturers high adhesion across a broad processing window. Figure 2, shows higher and consistent adhesion for a wide soldering temperature range relative to reference. SOL205B also shows comparable adhesion using Ag-free and Sn/Pb/Ag ribbon solder alloys.

SOL205B High Aged Adhesion Relative to Reference

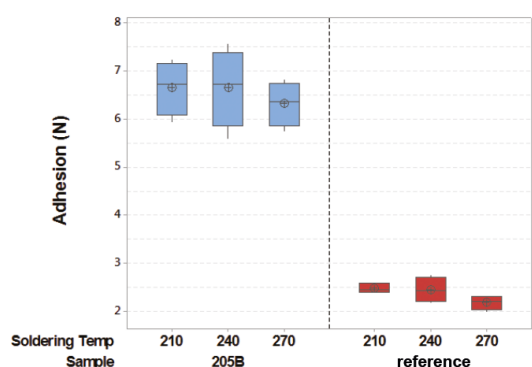


Figure 2: Heraeus' SOL205B Series demonstrates reliable adhesion across a wide soldering temperature window. The tests above were performed using full busbars

TYPICAL PROPERTIES

Viscosity:

- HBT Cone and Plate Viscometer (Brookfield):
- 50–100 kcps
- SC4–14 spindle@1 RPM, 25°C

Solid Content:

- 54.5 + 1.0%

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)

- 50%: < 5 µm
- 4th scratch: < 10 µm

RECOMMENDED PROCESSING GUIDELINES

Printing (Screen Parameter Recommendations):

- 250–280 mesh
- 35 µm wire
- EOM thickness: 5–10 µm

Drying:

- Typically dried in an IR dryer with a set point of approximately 250–300°C in less than 20 seconds.

Firing:

- IR furnace with actual wafer
- Peak temperature at 780–830°C

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.

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

Visit us online:

www.heraeus-photovoltaics.com
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