

### Conductors

### SOL953

### Front Side Silver for Solar Cells

**Description:**

SOL953 is a front side Ag conductor for mono and multicrystalline silicon solar cell wafers with lowly doped emitters. Optimized for high throughput processing, SOL953 provides excellent fine line resolution for advanced cell designs. It easily penetrates the SiN<sub>x</sub>:H anti-reflective coating during the firing process and provides low contact resistance. SOL953 can be co-fired with commercially available backside Al and Ag/Al pastes.

● **Key Benefits:**

- High efficiency
- Low series resistance
- Excellent fine line resolution
- Co-fireable with backside Al and Ag/Al paste
- Cd free
- Wide process window
- For high sheet emitter ( $\leq 80 \Omega/\square$ )

● **Typical Properties:**

**Viscosity**

180-240 Kcps; Brookfield HBT SC4-14 spindle and 6R utility cup @ 10 rpm, 25°C

**Solids:**

84.5 ± 1%

**Solderability:**

5 second dip @ 230°C  
62Sn/36Pb/2Ag, RMA Flux  
Excellent

**Wafer Types:**

Mono and multi crystalline

● **Recommended Processing Guidelines:**

**Printing:**

Stainless steel screen:  
280 mesh, 25 µm wire or 325 mesh, 23 µm wire  
20-30 micron emulsion

**Drying:**

Typically dried in an IR dryer with set points of 250-300°C in less than 20 seconds or 150°C for 10 minutes in circulated air oven.

**Firing:**

IR Furnace with Actual Wafer  
Peak Temperature at 740 -800°C  
Omega thermocouple KMQXL-020G-18

**Thickness:**

Fired: 15-20 microns

**Line Resolution (finger width):**

80-150 micron

**Thinner:**

RV-617

**Warranty:**

Material guaranteed to meet specifications for 6 months from date of shipment.

**Storage:**

Store in a dry location at 5°C-25°C.  
**DO NOT REFRIGERATE.**  
Allow paste to come to room temperature prior to opening.  
Spatulate well before using.

YY0309.1

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The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

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