

# Product Information Sheet



**ElectroSpense™ S-680** is an aluminum back surface field ink, designed for use in the manufacture of mono and polycrystalline silicon photovoltaic cells. S-680 enables efficient formation of a highly p-doped silicon region at the back surface of the cell through Al/Si alloy formation.

## Product Benefits

- Low bow for use with thin wafers
- Pb and Cd-free
- Co-fireable with all S-500 front side contact inks

## Product Characteristics

Typical Properties	S-680
Viscosity (cps) <sup>1</sup>	20,000-30,000
Percent Solids	67
Shelf Life (months after ship date)	6

(1) Measured with Brookfield cone/plate @ 9.6 s<sup>-1</sup>, 25°C

## Processing Recommendations

**Application:** Screen printing

**Screen Type:** 280-325 mesh stainless steel with 15-25 µm emulsion

**Typical Fired Thickness:** 25-30 µm range

**Substrate:** Mono and polycrystalline silicon

**Drying:** Typically 1-3 minutes in an IR belt drier at 200°C

**Firing:** Spike profile with IR furnace. Peak Temperature of 720-760°C – **See Figure 1**. Effective Al/Si alloy formation requires rapid firing in an air atmosphere on the recommended spike profile.

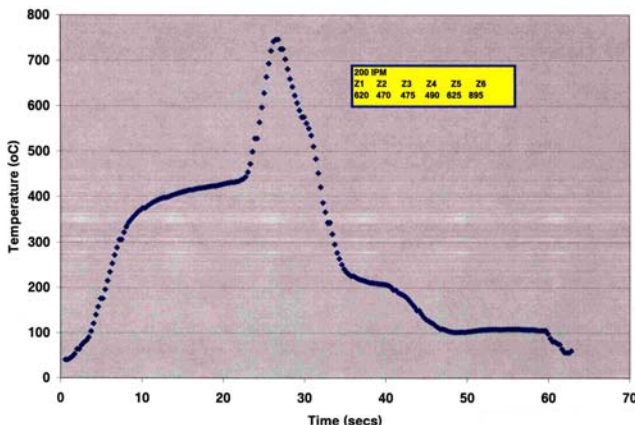


Figure 1: Representative Firing Profile  
Actual firing conditions must be established by customer.



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