

Paste For Front Contact Ag 1701 SC

PRODUCT DESCRIPTION: Ag 1701 SC is Chimet's premium front contact paste designed for today's mono- and multi-crystalline p-type solar cell wafers passivated with Si_xN_y anti-reflective coating. Ag 1701 SC is developed to ensure optimal performance and lot-to-lot repeatability. Ag 1701 SC contains special Chimet *NanoSilver* formulation to gain high cross sectional density combined with a print resolution limit of 50µm. This paste may be co-fired with back side aluminium conductor as Al75xxSC and Chimet Ag271xSC tabbing silvers.

BENEFITS

- Suitable for high sheet resistance emitter
- Wide process window
- Very high fine line capability
- Excellent solderability and adhesion
- Cd free
- Low odor

PROCESSING SUMMARY

Print speed: >200mm/s squeegee speed

Screen:

Line opening >70µm

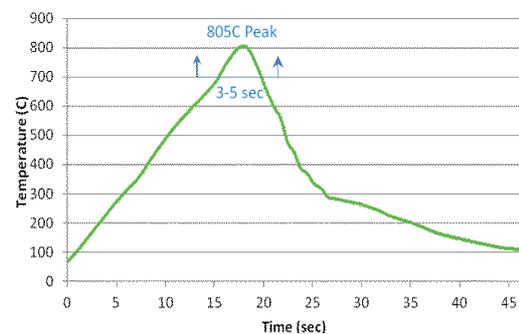
325mesh stencil screen, wire diameter 23µm (0.9mil), mesh angle 22÷30DEG

Line opening ≤70µm

290mesh stencil screen, wire diameter 20µm (0.8mil), or 400mesh stencil screen, wire diameter 18µm (0.7mil), mesh angle 22÷30DEG

Drying: 150°C for 10' in circulated air over or less than 60" in IR drying @200÷250°C.

Firing: IR firing in a fast (<60s) profile with a peak temperature between 780÷820°C. Recommended profile is below:



Soldering: compatible with industrial standard material and conditions, i.e. 60Sn/40Pb ribbon or 96.5Sn/3.5Ag ribbon.

Table 1. TYPICAL PROPERTIES #1

Viscosity #2

40 ÷ 70Pa·s

Solid content #3

90.5% ± 1.50%

Resistivity #4

< 2 mΩ/□@25µm

FOG (4th/50%) #5

< 12 µm/< 8 µm

#1 these are typical values obtained in our laboratory intended to illustrate paste potential and do not represent any specification

#2 TA cone 20mm, 1 DEG, 25°C peak hold@10s⁻¹

#3 calcination @750°C

#4 printed circuit on alumina with line width of 200µm

#5 Erichsen D-58675 Hemer Grindometer (Model 232)

STORAGE AND SHELF LIFE

Containers have to be stored in a clean, stable environment at room temperature (18°C÷25°C) tightly sealed. Storage in high temperature (>25°C) or in freezers (temperature <4°C) is not recommended.

RECOMMENDATION

Before use please stir the paste gently (to avoid air entrapment) by hand with a spatula for homogenisation (30" to 1'). Jar rolling is not recommended as this could change the rheology of the conductor.

THINNING

Ag1701SC is optimized for screen printing and thinning is not required. Use thinner 0202IT for slight viscosity adjustment or to replace evaporation losses. The use of too much thinner or the use of a not recommended thinner may affect the rheo-viscosity of the conductor and its printing behaviour.

TRANSPORTATION

Tightly capped plastic containers adapt to any kind of transport in compliance with the applied regulations.

SAFETY AND HANDLING

For information on health and safety regulations please refer to the product SDS.

For More information on Chimet Ag1701SC photovoltaic metallization or other Chimet, please contact the Thick Film Division:

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DISCLAIMER

The data published in this document come from experiments carried out in our laboratories and performed in conditions believed to be the most commonly accepted by the industry. It is the end-user's responsibility to check whether this product can be efficiently used in his specific process and under his specific industrial conditions which Chimet can neither control nor foresee. Chimet makes no warranties expressed or implied arising from the product use. Chimet specifically disclaims any liability for consequential or incidental damages of any kinds, including lost profits.

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