

## Conductors

### C5756

#### Fine Line Printable Gold Conductor

##### Description:

C5756 is a cadmium free, gold conductor paste that has been formulated for use with Al or Au wire bond applications. This material uses the same advanced developments in sub-micron gold powder technology as other Heraeus CMD high performance conductors, with the vehicle optimized for fine line screen printing. The material is capable of resolving 100 micron (4 mil) lines and spaces. C5756 is RoHS compliant.

##### ● Key Benefits

- Excellent Al and Au bondability
- High conductivity
- Fine line printing
- Cadmium free / RoHS compliant

##### ● Typical Properties:

##### Resistivity:

2.5-4.0 milliohms/square  
@ 10 microns thickness using 25 mil wide serpentine conductor pattern

##### Lines/Spaces Resolution:

100 micron lines and spaces (4 mils)

##### Coverage:

118 cm<sup>2</sup>/g  
(400 mesh, 0.9 mil wire, 0.5 mil emulsion)

##### Viscosity:

95 - 125 kcps, Haake C-20, 1° Cone  
@ 30 sec<sup>-1</sup>

##### Al Wire Bondability:

1.25 mil Wire  
99% Al, 1% Si, Elongation 0.5-1.5%  
Initial: > 8 grams  
1,000 Hours at 150°C: > 5.5 grams  
\* Note: All failures were wire breaks

10 mil Wire  
99.88% Al, Elongation 15-21.5%  
Initial: > 500 grams  
1,000 Hours at 150°C: > 225 grams

##### Au Wire Bondability:

2 mil Wire  
99.99% Au, Elongation 3-5%  
Initial: > 20 grams

##### ● Recommended Processing Guidelines

(For more detailed information, see document entitled, "Processing Guidelines for C5755A and C5756, AN #KQ005).

##### Printing:

350 mesh, 0.63 mil wire or 400 mesh, 0.7 mil wire  
0.5 - 0.6 mil emulsion

##### Print Speed:

> 6 in/sec (15 cm/sec)

##### Settling:

A settling time of 10 – 15 minutes is recommended. Parts should be dried as soon as possible after this settling period, (within 20 minutes), so the paste does not skin over. Parts should not be left out for long periods of time before drying. This allows the paste to skin over and can compromise adhesion. Wet parts should be covered if not dried right away.

##### Drying:

Dry at 150°C for 10 minutes  
Make sure ventilation is sufficient to prevent the wet film from skinning.

##### Firing:

850°C peak temperature, 10 minutes at peak  
Total cycle time of 45 - 60 minutes

##### Thicknesses:

Dried: 9 - 12 microns  
Fired: 6 - 8 microns

##### Compatibility:

- IP9117S, IP9117SL multilayer dielectrics
- IP9217, IP9227 Pb/Cd free multilayer dielectrics
- For solderable conductor overlaps with C5756, use C4006, C4003, C1075, C1076SD, C4131S.
- For C5756 overlaps with solderable conductors, use C4006 and C1076SD.

##### Thinner:

V-500

##### Storage:

DO NOT REFRIGERATE.  
Spatulate well before using.

##### Warranty:

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

CS0609.13

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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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