



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

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# CERMET GOLD CONDUCTOR

# 8846-GH

**Large-Diameter Wire Bonding • RoHS Compliant\***

ESL 8846-GH is an alloyed gold conductor suitable for large-diameter wire bonding for use on alumina and over lead-free dielectrics. It has been designed to give smooth, dense films and exhibits excellent wire bondability with both aluminium and gold wire.

## PASTE DATA

<b>Rheology:</b>	Thixotropic, screen-printable paste
<b>Viscosity:</b> (Brookfield RVT, 10 rpm, ABZ spindle, 25.5 ± 0.5 °C)	375 ± 25 Pa.s
<b>Bonding Mechanism:</b>	Mixed-bonded
<b>Shelf Life (20 - 25 °C):</b>	6 months

## PROCESSING

<b>Screen Mesh, Emulsion:</b>	200 / 325 S/S, 20 µm
<b>Levelling Time (at 20 °C):</b>	5 - 10 min
<b>Drying Time (at 125 °C):</b>	10 -15 min
<b>Firing Temperature Range:</b>	850 - 1000°C in air
	Optimum: 850 °C
	Time at peak: 10 min
<b>Total Firing Cycle:</b>	30 min
<b>Substrate for Calibration:</b>	96% alumina
<b>Thinner:</b>	ESL 401

ESL Europe 8846-GH 1012-D

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See Caution and Disclaimer on other side.

## TYPICAL PROPERTIES

### Fired Thickness:

Single layer - measured on a 2 mm x 2 mm pad on 96 % alumina: 9 - 13  $\mu\text{m}$

### Resistivity:

(measured on a 100 mm x 0.25 mm conductor track  
at 12.0  $\mu\text{m}$  fired thickness) <6.0 m $\Omega/\square$

### Printing Resolution:

(line/space) 0.100 mm / 0.100 mm

### Adhesion:

(90° pull, 2 mm x 2 mm pads,  
80Au/20Sn and 62Sn/36Pb/2Ag) Initial pull strength: >6.0 kg  
Aged 48 hours at 150 °C: >4.0 kg

### Thermosonic Au Wire Bond:

(50  $\mu\text{m}$  wire; bond length 1 mm) Initial pull strength: >35 g average  
Aged 24 hours at 200 °C: >35 g average

### Ultrasonic Al Wire Bond:

(38  $\mu\text{m}$  wire; bond length 1 mm) Initial pull strength: >17 g average  
Aged 48 hours at 150 °C: >11 g average

(250  $\mu\text{m}$  wire; bond length 4 mm) Initial pull strength: >650 g average  
Aged 48 hours at 150 °C: >625 g average

Large-diameter wire bonding use requires double layer with 325 mesh screen: > 17  $\mu\text{m}$

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\*None of the six substances referred to in the RoHS Directive (2002/95/EC) are used in the formulation of this product.

**CAUTION:** Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapours emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

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