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# Electro-Science Laboratories, Inc.

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## CERMET GOLD CONDUCTOR

# 8844

### Cadmium-free Conductor Featuring Smooth, Dense Films

ESL 8844 is an economical, general-purpose, cadmium-free gold conductor for use on alumina and ESL 4913-G dielectric. It has been designed to provide thin, smooth, dense fired films six to nine micrometers thick. Excellent thermosonic wire bond results can be obtained with 38 micrometer gold wire.

#### PASTE DATA

<b>RHEOLOGY:</b>	Thixotropic, screen printable paste
<b>VISCOSITY:</b> (Brookfield RVT, ABZ Spindle, 10 rpm, 25.5°C±0.5°C)	375±25 Pa·s
<b>BONDING MECHANISM:</b>	Mixed
<b>SHELF LIFE:</b> (25°C)	6 months

#### PROCESSING

<b>SCREEN MESH/EMULSION:</b>	325/20 $\mu$ m
<b>LEVELING TIME:</b> (25°C)	5-10 minutes
<b>DRYING AT 125°C:</b>	10-15 minutes
<b>FIRING RANGE:</b>	850°C-1000°C
<b>OPTIMUM:</b>	850°C
<b>TIME AT PEAK:</b>	10 minutes
<b>RATE OF ASCENT/DESCENT:</b>	50°C-60°C/minute
<b>SUBSTRATE OF CALIBRATION:</b>	96% alumina
<b>THINNER:</b>	ESL 402

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#### ESL Affiliates

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See Caution and Disclaimer on other side.

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## TYPICAL PROPERTIES

### FIRED THICKNESS:

(measured on a 2.0 mm x 2.0 mm pad on 96% alumina)

6-9  $\mu\text{m}$

### APPROXIMATE COVERAGE:

80-85  $\text{cm}^2/\text{g}$

### RESISTIVITY:

(measured on a 100 mm x 0.25 mm conductor track)

$\approx 7.5 \text{ m}\Omega/\text{sq.}$

### PRINTING RESOLUTION:

(Line/Space)

15  $\mu\text{m}$  on 250  $\mu\text{m}$  track

### ADHESION:

(90° pull, 2.0 mm x 2.0 mm pads,  
80 Au/20 Sn and 62 Sn/36 Pb/2 Ag)

Initial pull strength:

$\geq 45 \text{ N}$

### THERMOSONIC WIRE BOND:

(38  $\mu\text{m}$  Au wire; bond length 1.0 mm)

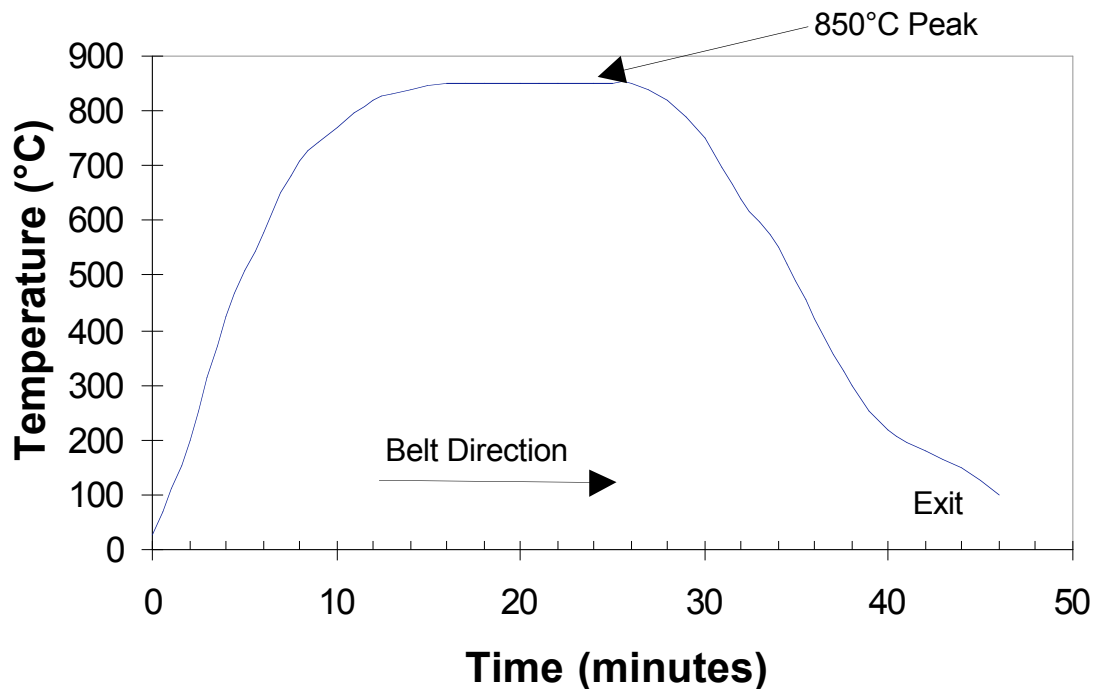
Initial

After 24 hours at 200°C

$\geq 20 \text{ g}$

$\geq 15 \text{ g}$

## Typical 850°C Firing Profile



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**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 vapors 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.

**DISCLAIMER:** The product information and recommendations contained herein are based on data obtained by tests we believe to be accurate, but the accuracy and completeness thereof is not guaranteed. No warranty is expressed or implied regarding the accuracy of these data, the results obtained from the use hereof, or that any such use will not infringe any patent. Electro-Science assumes no liability for any injury, loss, or damage, direct or consequential arising out of its use by others. This information is furnished upon the condition that the person receiving it shall make their own tests to determine the suitability thereof for their particular use, before using it. User assumes all risk and liability whatsoever in connection with their intended use. Electro-Science's only obligation shall be to replace such quantity of the product proved defective.