



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

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### PLATINUM CONDUCTOR

## 5542 PRINT GD 5542 POURING GD

### RoHS Compliant Platinum Conductor for SOFC, Sensors, etc.\*

ESL 5542 is a fritless platinum conductor and interconnect material available in screen-printable or pourable versions. The material is designed for use on partially stabilized zirconia for oxygen sensors and on tape-cast materials for solid oxide fuel cells and related applications. ESL 5542 is stable to 800°C-900°C and resists oxidation, which is particularly important for SOFC applications.

### PASTE DATA

<b>RHEOLOGY:</b>	Thixotropic, screen-printable paste or Pouring consistency
<b>VISCOSITY:</b>	
Printing Grade (Brookfield RVT ABZ spindle, 10 rpm, 25.5°C±0.5°C)	75-105 Pa·s
Pouring Grade (Brookfield HBT, CP-51, 10 rpm, 25.5°C±0.5°C)	5-6 Pa·s
<b>SHELF LIFE:</b>	6 months

### PROCESSING

<b>SCREEN MESH/EMULSION:</b> (Printing Grade)	325/20-30 μm
<b>LEVELING TIME:</b>	5-10 minutes
<b>DRYING:</b>	10-15 minutes, 90°C-125°C
<b>FIRING RANGE:</b>	950°C-1300°C
<b>OPTIMUM:</b>	980°C
<b>TIME AT PEAK:</b>	10-15 minutes
<b>SUBSTRATE OF CALIBRATION:</b>	96% alumina
<b>THINNER</b>	ESL 401

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#### ESL Affiliates

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See Caution and Disclaimer on other side.

## TYPICAL PROPERTIES

### PRINTING GRADE

<b>RESISTIVITY:</b>	≤ 100 mΩ/sq.
<b>FIRED THICKNESS:</b>	3-7 μm
<b>SOLDERABILITY:</b> (2.5 mm x 2.5 mm pads, 62 Sn/36 Pb/2 Ag solder, 220°C±5°C)	Fair to Good

### POURING GRADE

<b>RESISTIVITY:</b>	100-200 mΩ/sq.
<b>FIRED THICKNESS:</b>	5-10 μm

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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 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.

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