



ESL ELECTROSCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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CERMET PLATINUM CONDUCTOR

5542 5542-DG

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

ESL 5542 is a fritless platinum paste that may be applied by screen-printing or dipping (5542-DG) to form electrodes on zirconia substrates for oxygen sensor and fuel cell applications.

5542 and 5542-DG are stable up to 800 - 900°C and resist oxidation.

PASTE DATA

Rheology:

5542: Thixotropic, screen-printable paste

Viscosity:

(Brookfield RVT, 10rpm,
ABZ spindle, 25.5 ± 0.5 °C)

5542: 85 ± 15 Pa.s

(Brookfield RVT, 10rpm,
No. 3 spindle, 25.5 ± 0.5 °C)

5542-DG: 5.5 ± 0.5 Pa.s

Bonding Mechanism:

Fritless, MICRO-LOK®

Shelf Life (20 - 25 °C):

6 months

PROCESSING

Screen Mesh, Emulsion:

325 S/S, 25 µm

Levelling Time (at 20 °C):

5 - 10 min

Drying Time (at 100 °C):

10 -15 min

Firing Temperature Range:

980 - 1400°C in air

Optimum:

980°C

Time at peak:

10 min

Rate of Ascent/Descent:

50 - 60°C/min

Substrate for Calibration:

96% alumina

Thinner:

ESL 401

ESL Europe 5542, 5542-DG 9310-A

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See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

Fired Thickness:	5542: $5.0 \pm 1.0 \mu\text{m}$
Resistivity:	5542: $65 - 85 \text{ m}\Omega/\square$

ESL Europe 5542, 5542-DG 9310-A

*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.

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. ElectroScience 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 his own tests to determine the suitability thereof for his particular use, before using it. User assumes all risk and liability whatsoever in connection with his intended use. ElectroScience's only obligation shall be to replace such quantity of the product proved defective.
