



Electro-Science Laboratories, Inc.

416 East Church Road • King of Prussia, PA 19406-2625, U.S.A
610-272-8000 • Fax: 610-272-6759 • www.ElectroScience.com • Sales@ElectroScience.com

CERMET PLATINUM CONDUCTOR

5545-LS

For Heating Elements

ESL 5545-LS is a screen printable, fritted platinum conductor designed for use as a heating element. This material is thin printing and has TCR characteristics approaching that of bulk platinum. The TCR is the most positive when the material is fired at 1300°C. Customers who fire in the range of 850°C to 1300°C obtain excellent performance on prefired ceramics.

PASTE DATA

RHEOLOGY:	Thixotropic, screen printable paste
VISCOSITY: (Brookfield HBT Cone/Plate Viscometer, at 38.4 sec ⁻¹ , 23°C±0.2°C)	60-90 Pa-s
BONDING MECHANISM:	Fritted
SHELF LIFE:	6 months

PROCESSING

SCREEN MESH/EMULSION:	325/25 μ m
LEVELING TIME:	5-10 minutes
DRYING:	10-15 minutes, 90°C-125°C
DRIED THICKNESS:	9±3 μ m
FIRING RANGE:	850°C-1300°C
CALIBRATION:	850°C
TIME AT PEAK:	10-12 minutes
SUBSTRATE OF CALIBRATION:	96% alumina

5545-LS 0304-A

ESL Affiliates

Japan: ESL-Nippon Company, Ltd. • Sukegawa Bldg. • 6th floor • 3-4 Yanagibashi 1-chome • Taito-ku • Tokyo 111, Japan • Tel: (011-81)-3-3864-8521 • Fax: (011-81)-3-3864-9270
NipponSales@ESLNippon.com

China: Shanghai Agmet Electro-Science Laboratory Ltd. • Second Floor Bldg. 12A1 • #223 North Fe Te Road • Waigaoqiao Free Trade Zone • Shanghai, China
Tel: (011-86)-21-5866-0497 • Fax: (011-86)-21-5866-0497 • ShanghaiSales@ShanghaiESL.com

Europe: Agmet, Ltd. • 8 Commercial Road • Reading, Berkshire, England RG2 0QZ • Tel: (011-44)-118-987-3139 • Fax: (011-44)-118-986-7331 • Sales@ESLEurope.co.uk

See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

RESISTIVITY: (Normalized at 8 μ m dried thickness)

300-400 m Ω /square

FIRED THICKNESS:

3.5-4.5 μ m

SOLDERED ADHESION:

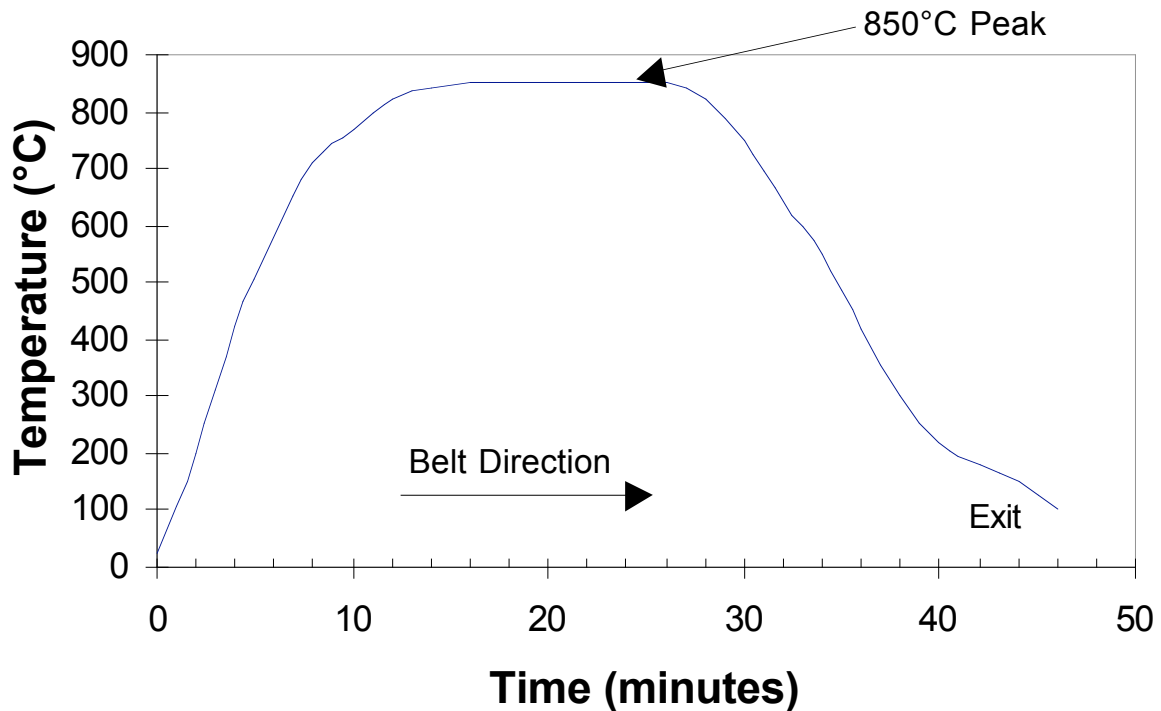
(2.5 mm x 2.5 mm pads, 62 Sn/36 Pb/2 Ag solder, on zirconia)

> 50 N

TCR:

3500 \pm 200 ppm/ $^{\circ}$ C

Typical 850 $^{\circ}$ C Firing Profile



5545-LS 0304-A

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 liability 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, 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. 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.