



## ESL ELECTRO-SCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

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### ELECTROLYTE TAPE

# 42405

### HIGH TEMPERATURE 6 MOL% SCSZ TAPE FOR USE IN SOFC AND OTHER FUEL CELLS

The ESL 42405 electrolyte is a 6 mol% scandia stabilized zirconia (ScSZ) ceramic layer prepared by casting on a polyester carrier film, which is coated with a release agent.

Typical applications for this tape are fabrication of SOFC and other fuel cells. The electrolyte is designed to be an excellent ionic conductor and poor electronic conductor at operating temperatures.

<b>STABILIZING AGENT:</b>	6 mol% Sc <sub>2</sub> O <sub>3</sub>
<b>GREEN TAPE THICKNESS:</b>	20 μm ± 5μm
<b>GREEN TAPE COLOR:</b>	off-white
<b>LAMINATING:</b>	21 MPa at 70°C
<b>TYPICAL SINTERING CYCLE:</b>	0.7°C/minute to 650°C 2.5°C/minute to 1350 -1450°C 2 hour soak at peak temperature
<b>FIRED SHRINKAGE:</b>	X,Y: 18-26 % Z: 18-22 %
<b>FIRED DENSITY:</b> (1450 °C for 30 minutes)	> 98% of theoretical

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See Caution and Disclaimer on other side.

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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.

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