Ultra-Thin Ceramic Membranes for Extreme Temperature Applications

40µm Thickness Ceramic Sheets Now Available
ENrG’s Thin E-Strate® is one of our latest offerings in ceramic component technology. With properties of high density, high strength, gas tightness and chemically inertness our ceramic foils are an excellent choice for chemically harsh, physically demanding, and extreme temperature applications.

Available in Fall 2012: 20µm thick Thin E-Strate®!

Advantages Include:
- Low thermal mass
- Thermal shock tolerant
- High strength
- High thermal cycling tolerance (>2000 hrs)
- Flexible in sintered state
- Visually translucent and Mid-wavelength IR
- Scalable
- High wear resistance and chemical durability
- Gas tight / 99.9% Dense
- Ionically conductive - Electrically nonconductive
- Smooth enough for thin films
- Can be textured
- Can be coated in temperatures > 800°C
- Lightweight; miniature

Specifications (for 40µm thick):
- 3mol% Yttria-Stabilized Zirconia (3YSZ)
- Ionic conductivity (σ @ 800°C) ~ 0.03 S/cm
- Surface roughness: RMS (Rq) ~ 25; Ra ~ 20
- ~ 75-80% in-line transmission at 2-7µm wavelength
- Strength (> 1Gpa)

Enabling Platform for Many Applications:
- Heaters, Igniters
- Sensors for extreme environments
  - Custom temperature embedded heaters
- Solar
  - Flexible support; dielectric; high temp thin film deposition
- Optical and Illumination
  - Non-imaging optics
- Superconductors
- Switches
- Shield for corrosion resistance
- Process Applications
  - Electrolysis / Gas Separation / Fuel Cells

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Durability & Strength Under Harsh Conditions

View videos of Thin E-Strate® thermal shock tests at www.enrg-inc.com/products.asp

Evaluation Kits Available for Purchase
40µm thick Thin E-Strate® is offered in the following sizes and quantities:
- 10-pack of 1cm x 1cm substrates - - NEW!
- 10-pack of 2.5cm diameter substrates
- 6-pack of 2cm x 5cm
- 5-pack of 4cm diameter
- 3-pack of 5cm x 5cm

Kits have 1-2 printing set-up pieces and advice on handling.

ENrG Inc.® Helps Transform Your Concepts to Commercial Reality
ENrG develops and manufactures advanced ceramic components for harsh environments.

Contact:
Learn more about ENrG at www.enrg-inc.com
To discuss how we may assist you or to discuss development of customized sintered thin membranes, dense or porous, contact:

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