ENrG™ Inc.

Ceramic Technology for Clean Energy

Ultra-Thin, Bendable Ceramic Membranes

Thin **E-Strate®**

40µ Thickness Ceramic Sheets Now Available

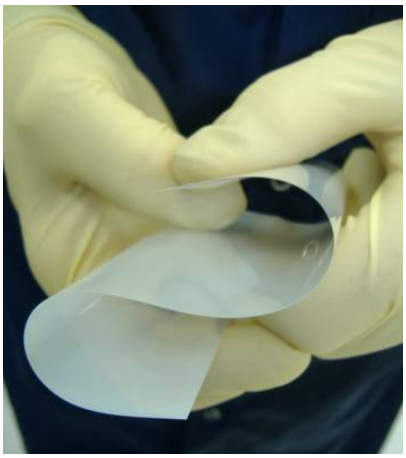
ENrG's 3YSZ Thin E-Strate® is one of our latest offerings in ceramic component technology. With properties of high density, high strength, gas tightness and chemically inertness our ceramic foils are an excellent choice for chemically harsh, physically demanding, and extreme temperature applications.

Advantages Include:

- High strength at extreme high and low temperatures
- High thermal shock resistance
- High thermal cycling tolerance (>2000 hrs)
- Low thermal mass
- Low thermal conductivity
- Flexure capability at temperature extremes
- High chemical durability
- High physical wear durability
- Very low weight
- Gas tightness
- Electro-chemical - ionically conductive
- Electrically nonconductive

Specifications:

- 3mol% Yttria-Stabilized Zirconia (3YSZ)
- 40µ thickness sheets
- Custom shapes & sizes; sheet widths up to 146 mm
- Custom coatings applied



ENrG's Ultra Thin E-Strate® Ceramic Components Bend to Meet Your Product Package Form Factor

Applications:

- Military electronics, hybrids, RF, flex-circuits
- Sensors for extreme high temperatures
- Substrates for superconductors
- Sensors for cryogenic temperatures
- Sensors – temperature, pressure, O_2, mechanical
- Electrolysis / gas separation
- High durability catalyst carriers for harsh processes
- Anode, cathode coated electrodes

Contact:

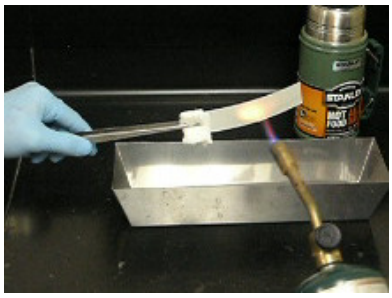
Kathy Olenick — 716.873.2939 ext. 210 — kolenick@enrg-inc.com

Durability & Strength Under Extreme Conditions

Thin E-Strate®

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

Blow torch flame applied



Liquid nitrogen quench

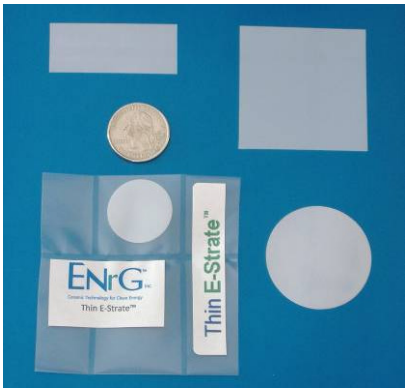
Flexing immediately after

Evaluation Kits Available

Button cell size evaluation kits of 40µ thick Thin E-Strate® are offered in the following sizes and quantities:

- 10-pack of 25mm diameter substrates
- 6-pack of 20mm x 50mm
- 5-pack of 40mm diameter
- 3-pack of 50mm x 50mm

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 custom advanced ceramic components for challenging applications. Some of our ceramic component technologies include:

- ThinESC®, a highly durable and flexible membrane integral to commercializing fuel cell systems
- Thin E-Strate®, ultra-thin, high strength, flexible dense YSZ ceramic sheets
- HEXIM®, an extremely light, high temperature thermal insulation
- Gas separation membranes for separation of gases such as CO_2, H_2, CO and for ion transport applications and removal of contaminants

Contact:

Learn more about ENrG at www.enrg-inc.com

To discuss how we may assist you contact:

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