ENrG Inc.
Ceramic Technology for Clean Energy

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Ceramic Insulation with Integrated Manifold & Heat Exchanger

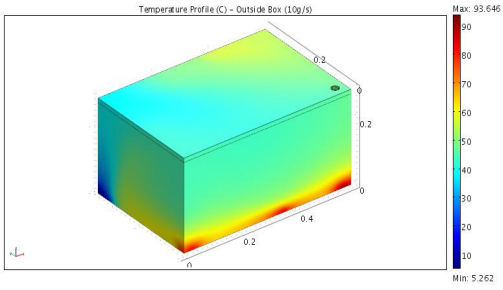
ENrG designs and manufactures multi-functional insulation packaging for high temperature applications. Taking the customer's size requirements and operating conditions, we utilize our design and modeling software to engineer an application-specific solution to thermal containment. With the ability to include integrated manifolds, variable wall thicknesses, thermal and mechanical heat exchange inserts and other functional details, ENrG provides customized solutions for specific design applications.

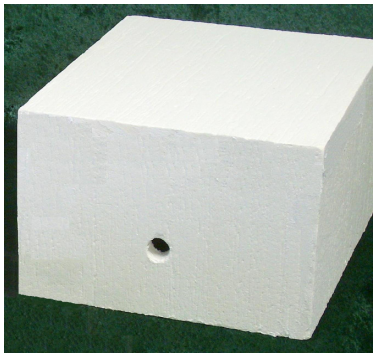
ENrG combines advanced ceramic materials and coatings to produce non-shedding insulation shielding internal operating temperatures to 1260℃, while the outer surface is safe to touch. Application examples include; phosphoric acid environments; refractory liners for reaction chambers; hydrogen reformers for fuel cell equipment including PEM, MCFC and SOFC; exhausts; and thermal oxidizers. For gas reactions, the design can provide a larger surface area and increased residence time without being a heat-sink. The result is a more complete reaction with lower emissions.

When engineering an insulation package, computer modeling can cut development time and the high costs associated with prototyping. Design options for the ceramic manifold / heat exchanger / insulation include complex rigid shapes, and integral fasteners for attachment to mating parts. These shapes can be CNC-machined to create a dimensionally accurate part where tight tolerances are required. When a customized package is required, ENrG brings a solutions-based approach to the project.

Alumina and Zirconia coatings create virtually non-shedding and dust-free surfaces as well as enhance material strength.

- **Molded to desired shape and thickness (¼" minimum)**
- **Capability to customize with integrated manifolds, inserts and fixturing**
- **Maximum operating temperature = 1260℃**
- **Moisture resistant**
- **High thermal shock resistance**
- **Oxidation and reduction resistant - water and oil resistant**
- **Low emissions of NO_x and CO in operation**





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