Pyrogel® materials are flexible aerogel nanoporous insulation blankets designed for high-temperature applications. The unique properties of very low thermal conductivity, high temperature resistance, good flexibility, and ease of use have made Pyrogel® essential for those seeking the ultimate in thermal protection.

Using patented technology, Pyrogel® materials combine a silica aerogel with reinforcing fibers to deliver superior thermal performance in an environmentally safe and non-toxic product. Pyrogel® 6650 is an opacified aerogel blanket for effective blocking of the radiation component of heat transfer. It delivers excellent thermal insulation up to 1200°F (650°C) for applications including aerospace, transportation, industrial equipment, power generation, high-temperature thermal and fire protection.

**Physical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness*</td>
<td>0.24 in (6 mm)</td>
</tr>
<tr>
<td>Max. Use Temp.</td>
<td>1200°F (650°C)</td>
</tr>
<tr>
<td>Color</td>
<td>Beige</td>
</tr>
<tr>
<td>Density*</td>
<td>7 lb/ft³ (0.11 g/cc)</td>
</tr>
<tr>
<td>Hydrophobic</td>
<td>Yes</td>
</tr>
<tr>
<td>Material Form*</td>
<td>36 in (914 mm) wide x 30 ft (9 m) long rolls</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>10.6 psi (72.8 kPa)</td>
</tr>
<tr>
<td>Specific Heat</td>
<td>0.25 BTU/lb-°F (1.046 J/g-K)</td>
</tr>
</tbody>
</table>

* Nominal Values

**Advantages**

**Superior Thermal Performance**
Up to five times better thermal performance than competing insulation products

**Minimum Weight and Thickness**
Low thermal conductivity at a fraction of the thickness

**Less Time and Labor to Install**
Easily cut and conformed to complex shapes, tight curvatures, and spaces with restricted access

**Physically Robust**
Soft and flexible but with excellent springback, Pyrogel® 6650 recovers its thermal performance even after compression events as high as 50 psi

**Shipping and Warehousing Savings**
Reduced material volume, high packing density, and low scrap rates can reduce logistics costs by a factor of five or more compared to rigid, pre-formed insulations

**Simplified Inventory**
Unlike rigid pre-forms such as pipe cover or board, the same Pyrogel® 6650 blanket can be kitted to fit any shape or design

**Excellent Fire Protection**
Equal to or better than other insulation materials, including mineral wool and calcium silicate

**Hydrophobic Yet Breathable**
Pyrogel® 6650 repels liquid water but allows vapor to pass through

**Environmentally Safe**
Landfill disposable, shot-free, with no respirable fiber content
**Performance**

Cold side temperature measurements after Pyrogel® 6650 is placed on a hot plate at specified temperatures.

![Graph showing cold side temperature measurements](image)

**Flammability**

Pyrogel® 6650 meets the requirements of the Department of Transportation, Federal Aviation Regulations for Compartment Interiors, Par. 25.853 Appendix F Part I, Section a (1) (I), (60 Second Ignition Time with 0.0 seconds afterflame).

**Handling Characteristics**

Pyrogel® 6650 can be cut using conventional textile cutting tools including scissors, electric scissors and razor knives. The material can be dusty and it is recommended gloves and dust mask be worn when handling material. See MSDS for complete health and safety information.

**Effects of Moisture and Solvents**

Pyrogel 6650 series products are hydrophobic as produced. Exposures to 750°F (400°C) or above can degrade the hydrophobic properties. It is not recommended to expose Pyrogel® products directly to most organic solvents.

**Encapsulation**

Encapsulation is recommended to protect the aerogel from harsh environments. In addition encapsulation helps to contain the material, prevent contamination and assist in its attachment to a surface. Encapsulation can be done in numerous ways. For more information, contact an Aspen Aerogels representative.

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