

# Product Information Sheet



## INTRODUCTION

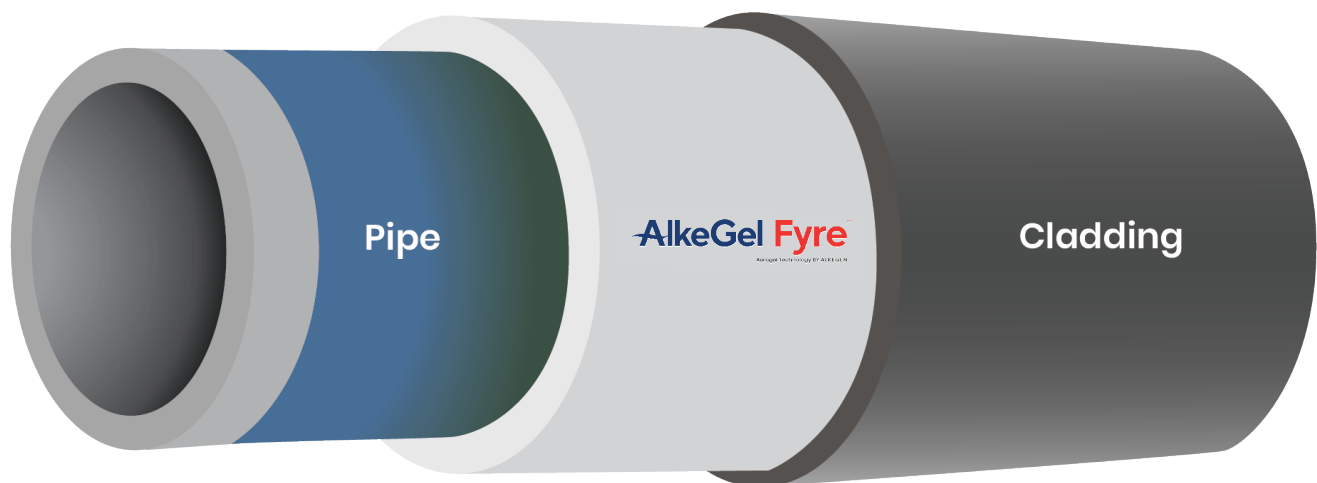
AlkeGel Fyre is part of a new portfolio of ultra-lightweight aerogel insulating materials. These fiber-enhanced aerogels offer advantages in their improved product handleability, fire resistance and acoustical performance.

AlkeGel is designed to minimize the impact of Corrosion Under Insulation (CUI) on the pipe lifespan for small / large bore pipes and large process vessels, reducing maintenance budgets and the risk of catastrophic failure. The Alkaline Earth Silicate (AES) fiber chemistry is designed to allow rapid biological clearance. Alkegel Fyre meets the European regulatory requirement 1272/2008 (formerly European Commission Directive 97/69/EC) and does not require any special health hazard labeling



## KEY CHARACTERISTICS

- ASTM C1728 Compliant
- 80% less dusty than other aerogel blankets
- Available 5mm & 10mm Thicknesses
- ISO 22899 J120 Jet Fire Protection - 120 Minutes
- Hydrophobic - ASTM C1763 Water Absorption
- Made In The USA



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## TYPICAL PRODUCT PARAMETERS

AlkeGel Fyre	
<b>Physical Properties</b>	
Color	Grey
Material	Flexible Aerogel Blanket Insulation
Classification (ASTM C1728)	Type V, Grade 1A
Maximum Use Temperature, (ASTM C411 & C447), °F (°C)	1200 (650)
Density, lb/ft <sup>3</sup> (kg/m <sup>3</sup> )	10 (160)
Hydrophobic	Yes

Permanent Linear Shrinkage (ASTM C356)	
After 24 Hour Soak @ 1200°F (650°C)	<2.0%

Thermal Conductivity (ASTM C177)	
Mean Temperature, °F (°C)	Thermal Conductivity, Btu in/hr ft <sup>2</sup> °F (W/m-K)
75 (24)	0.185 (0.026)
100 (38)	0.185 (0.026)
200 (93)	0.193 (0.027)
300 (149)	0.212 (0.030)
400 (204)	0.242 (0.035)
500 (260)	0.284 (0.041)
600 (316)	0.335 (0.048)
700 (371)	0.398 (0.057)

Fire Protection	
Hot Surface Performance & Maximum Exothermic Temperature Rise (ASTM C411)	Pass
Jet Fire (ISO 22899-1)	J120 (Max temp of 350C)
Surface Burning Characteristics (ASTM E84, EN13501, CAN/ULC-S102, Mounting E2231)	Flame Spread Index = 0 Smoke Developed Index = 10

Corrosion & Chemical Properties	
Insulation Influence on Stress Corrosion Cracking of Austenitic Stainless Steel (ASTM C795, C692)	Pass
Corrosiveness to Steel (ASTM C1617)	Pass
Water Vapor Sorption (ASTM C1104, 1104M)	<1%
Water Absorption by Immersion (ASTM C1763)	Pass
Fungal Resistance (ASTM C1338)	No growth

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Mechanical Properties	
Compression Strength @ 10% Deformation (ASTM C165), psi (kPa)	> 3 (21)
Flexibility Classification (ASTM C1101, C1101M)	Resilient Flexible

Superior heat flow uniformity reduces condensation resulting from temperature variation, reducing CUI

## AVAILABILITY

Thickness, in (mm)	Width, in (mm)	Standard Roll Length, ft (m)	Jumbo Roll Length, ft (m)
0.20 (5)	60 (1524)	300 (91.4)	600 (183)
0.40 (10)	60 (1524)	150 (46)	300 (91.4)

AlkeGel Blankets are produced and distributed worldwide; however, packaging, density, and thickness may differ based on regional needs. To obtain information on specific packaging options please reach out to your nearest Alkegen representative.

## BENEFITS OF AEROGEL INSULATION

- Superior thermal insulators (extremely low thermal conductivity)
- Environmentally friendly
- Defend & protect against corrosion under insulation (CUI)
- Light weight
- Flexible & resilient
- Thermal shock resistance
- Hydrophobic

## ADVANTAGES OF ALKEGEL FYRE OVER TRADITIONAL AEROGEL:

- 80% less dusty than traditional aerogels
- Extremely easy to cut and handle
- Superior material uniformity
- Superior heat flow uniformity
- Fiber-enhanced aerogel containing high temperature insulating wool

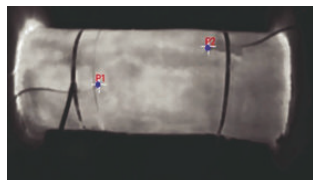
### Competitive Aerogel



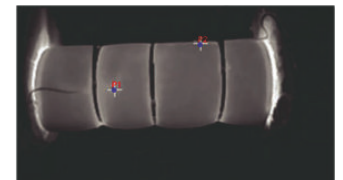
Excessive dust



Minimal dust



"Hot spots" due to non-uniform aerogel distribution



Thermal images demonstrate uniform heat flow through AlkeGel

## TYPICAL INDUSTRIES & APPLICATIONS

### Petrochemical & Refining

- Heat Trace / Steam Trace
- Delayed Coking
- Cracking
- Reforming
  - Jacketing/Removable Covers

### Liquified Natural Gas (LNG)

- Piping
- Terminal Storage
- Trailers, Cars, Ships

### Power Generation

- Piping

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## INSTALLATION OVERVIEW

Precise cutting of AlkeGel is achieved using common tools. We recommend the following tools at the installation site:

- Scissors
- Utility Knife
- Electric Shears
- Slitters
- Measurement Tools (Tape measure, straight edge, set square)
- Markers/Pens
- Pliers

## SAFETY & STORAGE

Installer safety and cleanliness is what sets AlkeGel ahead of existing aerogel blankets. Handling AlkeGel will produce considerably less dust and irritation in the workplace. As a general guideline, we recommend the following PPE when working with AlkeGel:

1. Safety Eyewear
2. Work gloves

Please refer to the material safety data sheet (SDS) for more detailed work practices and other EH&S information.

## HEALTH AND SAFETY INFORMATION

SDS is available on our website

**Safety Data Sheets -** [CLICK HERE](#)

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AlkeGel is suitable for application on:

1. Single Wrap Pipe
2. Multi-Layer Pipe
3. Pipe Elbow & Bends
4. Flanges, Valves, & Fittings
5. Small-bore Pipe

NOTE: Please contact Alkegen Application Engineering office to discuss key application details including project specific procedures and required cutting.



AlkeGel rolls should always be stored on their side. Avoid orienting rolls in an "upright" position for storage, as this can affect the edges of the rolls. Ensure material is stored in a dry, clean environment.

**Alkegen**  
Headquarters  
5215 N. O'Connor Blvd, Suite 2300  
Irving, TX 75039  
Telephone: 716-768-6500  
Website: [www.alkegen.com](http://www.alkegen.com)  
Email: [info@alkegen.com](mailto:info@alkegen.com)

