# K-Aerogel Ht-S

Redefining Thermal Insulation

# K-Aerogel Ht-S

## Aerogel Blanket for Hot Insulation

K-Aerogel Ht-S is a high-performance insulation blanket made from silica aerogel and a glass fiber needled blanket, designed for industrial applications with temperatures up to 650°C.

It has low thermal conductivity, is hydrophobic yet vapor-permeable, and remains breathable under compression. These properties help reduce heat loss and heat gain, while providing reliable protection against Corrosion Under Insulation (CUI).

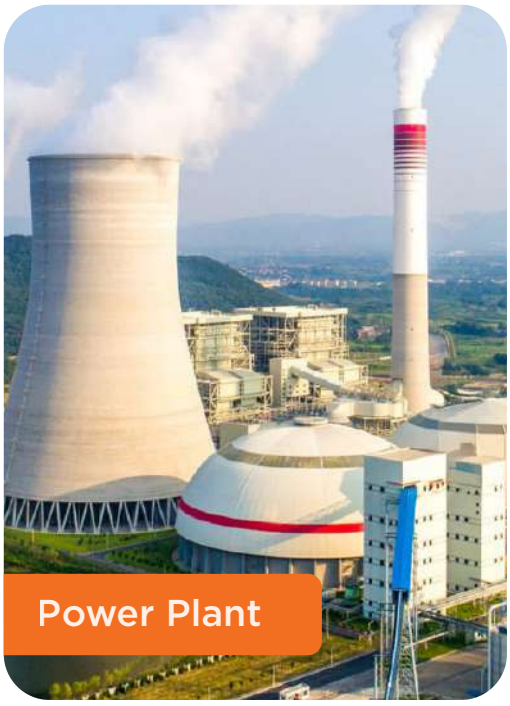
K-Aerogel HT-S is non-combustible, lightweight, and easy to handle, offering consistent thermal performance with minimal thickness and long-term durability in demanding environments.

## Industry Applications

# Thermal Protection For Industrial Excellence

K-Aerogel insulation suits pipes, vessels, tanks, and equipment across multiple industries. It delivers consistent thermal performance and resists compression and harsh environments. Commonly used in oil & gas, petrochemical, and power generation sectors.



# Key Performance Features

**Low Thermal Conductivity**
Maximum energy efficiency with industry-leading thermal performance for optimal heat retention and loss prevention.

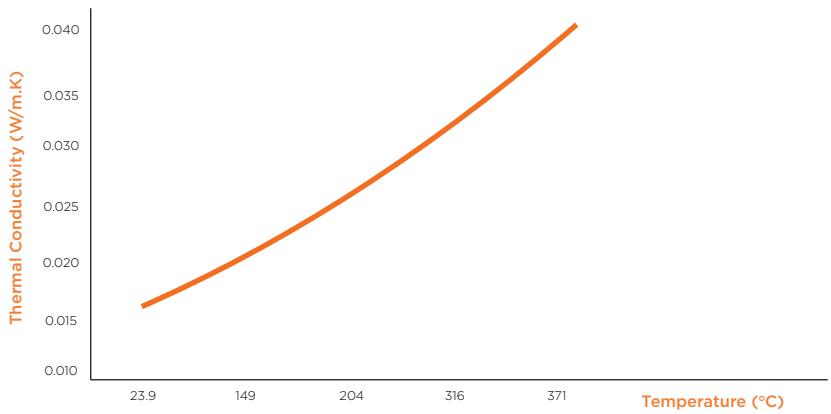
**Compression Resistant**
Maintains structural integrity under stress and thermal cycling for long-term reliability.

**Hydrophobic & Vapor Permeable**
Superior moisture resistance while allowing vapour transmission, preventing condensation and maintaining performance.

**Thinner Design**
40-60% thinner than conventional insulation materials, saving valuable space and reducing material costs in constrained applications.

# Thermal Insulation Performance

*Evaluated in compliance with ASTM C177 standard method*




| Mean Temp. (°C) | 23.9 | 149 | 204 | 316 | 371 |
|---|---|---|---|---|---|
| k (W/m.K) | 0.019 | 0.024 | 0.027 | 0.036 | 0.042 |

K-Aerogel Ht-S exhibits low and stable thermal conductivity across varying temperatures.

At 25°C, its thermal conductivity is 0.017 W/m·K, gradually increasing to 0.042 W/m·K at 371°C.

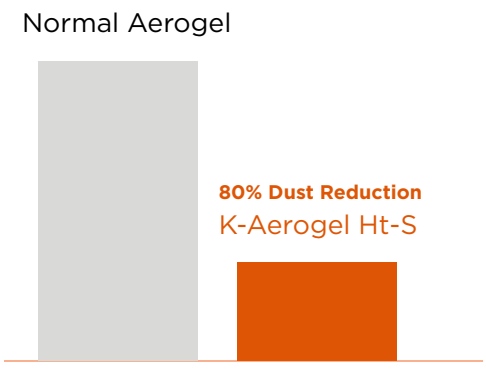
This consistent performance ensures effective heat control and energy efficiency, even in high-temperature applications, while allowing for thinner insulation designs compared to conventional materials.

# Lower Dust Release

Dust has long been a common concern when handling aerogel insulation. With advanced material engineering,

K-Aerogel Ht-S significantly minimizes dust release, achieving up to 80% reduction compared to conventional aerogel materials.

This improvement provides a cleaner, safer, and more comfortable installation environment



# Technical Datasheet

## Material Physical Properties

| Specification | K-Aerogel Ht-S |
|---|---|
| Thickness Option | 10 mm (0.4 in) |
| Roll Size | 10mm x 1.5m / 1.6m x 28m |
| Max. Operating Temperature | 650°C (1200°F) |
| Density (Nominal) | 170 kg/m$^3$ |
| Water Repellency | Yes – repels liquid water while allowing vapor transmission |
| Thermal Conductivity | <0.019 W/m.k at 25°C |

## Specification Compliance and Performance

| Test Method | Property Evaluated | Result / Clarification |
|---|---|---|
| ASTM C1728 | Standard Specification | Type III, Grade 1A – Complies |
| ASTM C165 | Compressive Resistance | ≥ 3 psi (20.7 kPa) @ 10% deformation |
| ASTM C356 | Linear Shrinkage After Heat Exposure | < 2% |
| ASTM C411 | Hot Surface Performance | Meets requirement |
| ASTM C447 | Maximum Operating Temperature | 650°C (1200°F) |
| ASTM C795 | Compatibility with Austenitic S.Steel | Non-corrosive / Meets requirement |
| ASTM C1101 / C1101M | Flexibility of Blanket Insulation | Flexible |
| ASTM C1104 / C1104M | Water Vapor Sorption | < 5% (by weight) |
| ASTM C1338 | Fungal Resistance | No fungal growth observed |
| ASTM C1617 | Corrosiveness to Steel | Non-corrosive |
| ASTM C1763 | Water Absorption by Immersion | Within acceptable limit |
| ASTM CE84 | Surface Burning CharacteristicS | FSI < 5, SDI < 10 |

The information and test data presented are based on laboratory evaluations and are provided for general reference only. Actual performance may vary depending on application conditions, installation methods, and operating environments.

**Contact Us**

For more information, visit
www.klayenersol.com

A-19-6, Block A, Jaya One, No 72A,
Jalan Profesor Diraja Ungku Aziz,
46200, Petaling Jaya, Selangor