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An innovative new product combining unsurpassed thermal insulation and acoustic properties.

Insulair® Granulates are a unique form of amorphous silica which are characterized as highly porous (approximately 97% air) with low solids content of 3-5%.

General

Insulair® Granulates allow light to pass while serving as a highly effective thermal insulation. Amorphous silica is a poor heat conductor and the low solids content offers little for solid phase conductivity. The pore sizes are smaller than the mean free path of air and prevents gas phase conductivity.

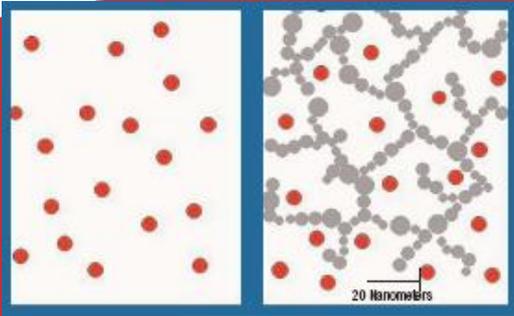
Features

- Great thermal insulator
- Reduces sound transmission
- Completely moisture resistant
- Will not support growth of mold, mildew or fungus
- Performance will not deteriorate over time
- Chemically stable and inert

Characteristics

Particle Size Range	0,5 to 4,0 mm
Pore Diameter	5 – 20 nm
Porosity	> 90%
Bulk Density	90 to 100 kg/m ³
Surface Chemistry	Hydrophobic
Thermal Conductivity	0,018 W/m-K at 25° C
Temp. Range	- 100° C to 100° C

Heat Source



Gas molecules
in open structure

Gas molecules
trapped by Insulair



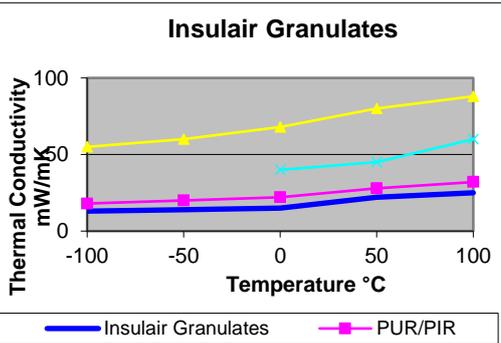
Heat transfer

Heat transfer is accomplished through four mechanisms:

- Solid phase conduction
- Gas phase conduction
- Convection
- Radiation

Insulair® Granulates can significantly reduce all except radiational transfer, allowing for a significant heat retention.

Insulair® Granulates can fill up complex shapes where traditional insulation materials are difficult to apply. The granulates are easy installed at the jobsite.



Thermal Insulation (Heat Transfer Comparison)

The gas molecules in the unconfined space bump into each other to transfer heat energy. The nanoporous Insulair® lattice network 'traps' the gas molecules and prevents them from bumping into each other. Nitrogen and oxygen molecules in the air are spaced about 20-30 nanometers apart. This is their 'mean free path'. The pore sizes of Nanogel are about 5 - 20 nanometers.

Delivery

The material is delivered in industrial big bags.

Advantages

- Gain space due to thinner insulation and achieve the same performance as with traditional materials;
- Insulair® Granulates are super moisture resistant which results in a continuous guaranteed thermal performance;
- Due to the small dimensions of the granulates, complex shapes can easily be filled;
- Due to the chemical stability, the product remains constant over time;

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