

SUPERWOOL® HT™ HIGH-TEMPERATURE INSULATION MATERIALS

Superwool® HT™ products are a range of versatile high-temperature insulation products which are safe to use and retain their outstanding properties even at elevated temperatures.

Historically, fiber-based insulation products have often been accompanied by health issues associated with their use. However, Superwool® HT™ has been developed as a safe-to-use alternative material with low bio persistence, meaning that any fibers which may be breathed in are rapidly removed by natural processes within the body.

In addition to very low thermal conductivity, Superwool® HT™ products have a classification temperature of 1300°C, good strength, low shrinkage and offer thermal stability.

APPLICATIONS OF SUPERWOOL® HT™ HIGH-TEMPERATURE INSULATION MATERIALS

- > Kiln linings
- > Heat treatment furnace linings
- > Ladle & trough covers
- > Heat containment
- > Boiler walls

The low shrinkage properties of Superwool® HT™ products avoid the creation of hot spots and reduce time spent on costly maintenance operations.

The excellent insulating properties of Superwool® HT™ ensure energy savings are maximized, whilst using minimal space.

Goodfellow Ceramic and Glass Division are able to offer Superwool® HT™ materials in a number of different forms. The following are readily available sizes, but other sizes can also be supplied on request:

Paper:	2mm and 4mm thick	Blanket:	6mm, 13mm, 25mm thick
Board:	10mm and 25mm thick	Bulk fiber:	1kg lots upwards
Mastic:	300ml cartridge		

Applications for Superwool® HT™ products can often be found in the following industries:

- > Glass
- > Petrochemical
- > Ceramics
- > Civil construction
- > Foundries

Superwool® HT™ is an alkaline earth silicate (AES) fiber. Its CAS number is 436 083-99-7. Superwool is a trademark of The Morgan Crucible Company plc.



This photograph is a representation of the insulating properties of Superwool® HT™. Under no circumstances should you attempt to recreate this or any similar demonstration.

→ www.goodfellow-ceramics.com

→ ceramic@goodfellow.com

Superwool® HT™ Blanket

Typical Properties

Classification Temperature	1300°C
Color	white
Density	128 kg/m ³
Tensile strength (EN 1094-1)	75 kPa

High-Temperature Performance

Permanent linear shrinkage (EN-1094-1) after 24 hours isothermal heating at 1260°C	<2 %
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Thermal conductivity (ASTM C201) at mean temperature of:

200°C	0.04 W/m.K
400°C	0.08 W/m.K
600°C	0.14 W/m.K
800°C	0.23 W/m.K
1000°C	0.34 W/m.K
1200°C	0.48 W/m.K

Chemical Composition

SiO ₂	70-80 %
CaO + MgO	18-25 %
Others	<3 %

→ www.goodfellow-ceramics.com

→ ceramic@goodfellow.com

USA

Goodfellow Corporation
Tel: +1 800 821 2870
Fax: +1 800 283 2020

France

Goodfellow SARL
Tel: 0800 917 241 (n° vert)
or +44 1480 424813
Fax: 0800 917 313 (n° vert)
or +44 1480 424900

Germany

Goodfellow GmbH
Tel: 0800 1000 579 (freecall)
or +44 1480 424810
Fax: 0800 1000 580 (freecall)
or +44 1480 424900

People's Republic of China

Goodfellow Shanghai Office
Tel: +86 21 6112 1560
Fax: +86 21 6130 4901

UK and all other countries

Goodfellow Cambridge Ltd
Tel: 0800 151 3115 (Freephone)
or +44 (0)1480 424888
Fax: 0800 151 3225 (Freephone)
or +44 (0)1480 424988



Superwool® HT™ Paper

Typical Properties

Classification Temperature	1300°C
Properties Measured at Ambient Conditions (23°C/50% Relative Humidity)	
Color	white
Density (average)	210 kg/m ³
Tensile strength (EN 1094-1)	>0.45 MPa

High-Temperature Performance

Loss on ignition	8 %
Linear shrinkage at 1260°C	<2 %

Thermal conductivity (ASTM C201) at mean temperature of:

200°C	0.04 W/m.K
400°C	0.07 W/m.K
600°C	0.10 W/m.K
800°C	0.14 W/m.K
1000°C	0.19 W/m.K
1200°C	0.25 W/m.K

Chemical Composition

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CaO + MgO	18-25 %
Others	<3 %

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Superwool® HT™ Board

Typical Properties

Classification Temperature	1300°C
Properties Measured at Ambient Conditions (23°C/50% Relative Humidity)*	
Color	white/tan
Density	350 kg/m ³
Modulus of rupture	1.2 MPa
Compressive stress at 10% deformation	0.3 MPa

High-Temperature Performance

Loss on ignition after 2 hours heating at 800°C	<5 %
Permanent linear shrinkage (ASTM C-201) after 24 hours isothermal heating at 1200°C	<1.5 %
Permanent thickness shrinkage (ASTM C-201) after 24 hours isothermal heating at 1200°C	<3.0 %

Thermal conductivity (ASTM C-201) at mean temperature of:

200°C	0.05 W/m.K
400°C	0.08 W/m.K
600°C	0.11 W/m.K
800°C	0.15 W/m.K
1000°C	0.20 W/m.K
1200°C	0.26 W/m.K

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Superwool® HT™ Mastic

Typical Properties

Classification Temperature (of base fibre)	1300°C
Properties Measured at Ambient Conditions (23°C/50% Relative Humidity)	
Color	white
Density as supplied	1420 kg/m ³
dried	730 kg/m ³
Modulus of rupture (BS 1902) (dried)	1.5 MPa
Linear drying shrinkage	<1 %

High-Temperature Performance

Permanent linear shrinkage (ENV 1094-7) after 24 hours isothermal heating at 1100°C	1.0%
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Superwool® HT™ Bulk

Typical Properties

Classification Temperature	1300°C
Color	white
Specific gravity	2.50 g/cm ³
Beaker value*	
Bulk code 70 unchopped	650 ml
Coarse chopped G25	200 ml
Fine chopped G08	130 ml
<i>*Beaker value is a measure of the fibre length using settling test method. The larger the beaker value the longer the fibre.</i>	

High-Temperature Performance

Specific heat capacity at 1090°C	1.22 kJ/kg.K
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Chemical Composition

SiO ₂	70-80 %
CaO + MgO	18-25 %
Others	<3 %

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