

Data sheet

**WDS® Ultra**

ENGLISH

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**Description**

**WDS® Ultra is a microporous insulation material which has an extremely low thermal conductivity coefficient giving it very good insulating properties.**

WDS® Ultra consists of inorganic silicates. The main constituent is fumed silica; the other components are opacifiers to minimize infrared radiation.

WDS® Ultra is not flammable and meets the requirements acc. to DIN EN 13501-1 for fire protection class A1.

**Application**

Tried and tested applications for WDS® Ultra include insulation for heat-treatment furnaces in the aluminum industry, or back-up insulation in the industrial furnace industry.

**In these applications, WDS® Ultra fulfills several functions, such as :**

- Controls energy emissions, precisely
- Increase in effective volume
- Increase in heat retention
- Reduces both weight and insulation volume

**WDS® Ultra is also successfully used as insulation material in the following areas:**

- Heat treatment systems for glass
- Fire protection equipment
- Electronic devices
- Measurement equipment
- Plant construction parts
- Chimneys, pipes

**Form of delivery**

**Standard sizes:**

- 500mm x 650 mm  
(29 x 26 inch)
- 1000mm x 650 mm  
(39 x 26 inch)

**Standard thicknesses:**

- 10mm, 15mm, 20mm, 25mm
- 30mm, 35mm, 40mm, 45mm, 50mm
- Maximum Size 1320 mm x 1000 mm  
x thickness  
(0.4 inch, 0.6 inch, 0.8 inch, 1 inch,  
1.2 inch, 1.4 inch, 1.6 inch, 1.8 inch, 2 inch
- Maximum Size 52 inch x 39 inch x  
thickness)

Tolerances acc. to DIN ISO 2768. Tolerance class "c", coarse for length, breadth, for thickness ± 1mm. Special formats available on request

**Restrictions on applications**

WDS® Ultra has a porous surface therefore it is sensitive to all liquids that can wet it; this includes substances such as water, oil and petroleum spirit, since they can destroy the pore structure.

The moisture sensitivity of WDS® Ultra can be greatly improved or eliminated by treating it with an appropriate surface treatment such as PE film or aluminum foil.

**Shelf life**

- WDS® Ultra has an unlimited shelf life, if properly stored.
- WDS® Ultra must be handled and stored in dry conditions.
- WDS® Ultra is resistant to diffusion by atmospheric humidity (water vapour).

**Thermal Shock Resistance**

WDS® Ultra is insensitive to high and low temperature thermal shocks.

**Safety directions**

WDS® Ultra is not a hazardous substance according to the EU Directive 2006/1907/EEC. The fibers used for mechanical reinforcement have a diameter of > 5 µm; therefore they are not respirable (in accordance to the WHO definition) WDS® Ultra does not use any dangerous decomposition substances and according to current knowledge, it does not cause any problems to human health or the environment.

**Composition**

Silicon dioxide	SiO <sub>2</sub>	approx. 80%
Silicon carbide	SiC	approx. 15%
Others		approx. 5%.



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Metric information

Physical properties		
Colour		Grey
Nominal density kg/m <sup>3</sup>		200 - 250
Classification temperature °C		1000
Recommended temperature of use °C		950
Cold compressive strength MPa ASTM C165		0.417
Compressive strength MPa ASTM C165 @600°C		0.71
Shrinkage % @1000°C for 12 hrs exposed on single side AAW 906-00		0.6
Linear shrinkage % 24hrs full soak	@900°C	1.1
	@950°C	1.4
Specific heat capacity kJ/kg·K DIN 51007 @700°C		0.945
Thermal conductivity W/m·K ASTM C177	@200°C	0.022
	@400°C	0.027
	@600°C	0.034
	@800°C	0.044

The above data are only intended as a guide and should not be used in preparing specifications.

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The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.

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Imperial information

Physical properties		
Colour		Grey
Nominal density pcf		12,91 - 15,76
Classification temperature °F		1832
Recommended temperature of use °F		1742
Cold compressive strength MPa ASTM C165		0.417
Compressive strength MPa ASTM C165 @1112°F		0.71
Shrinkage % @1742°F for 12 hrs exposed on single side AAW 906-00		0.6
Linear shrinkage % 24hrs full soak	@1652°F	1.1
	@1742°F	1.4
Specific heat capacity kJ/kg·K DIN 51007 @932°F		0.945
Thermal conductivity BTU·in./hr·ft <sup>2</sup> ·°F ASTM C177	@392°F	0.15
	@752°F	0.19
	@1112°F	0.24
	@1472°F	0.31

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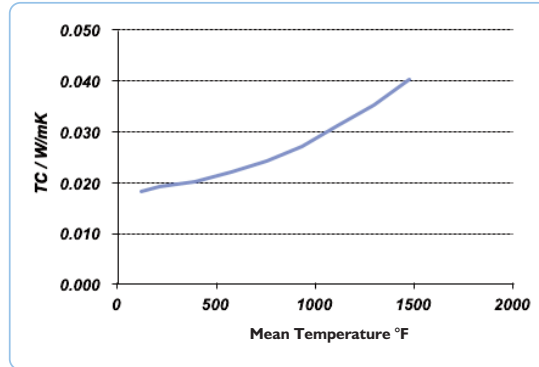
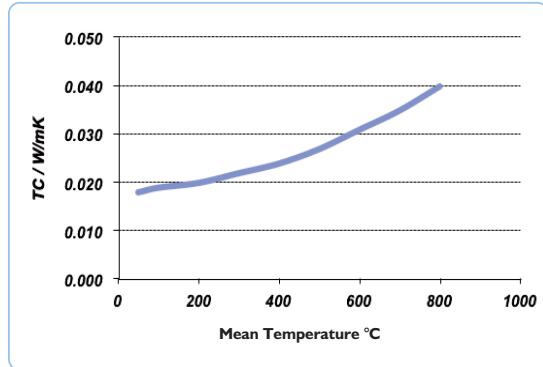
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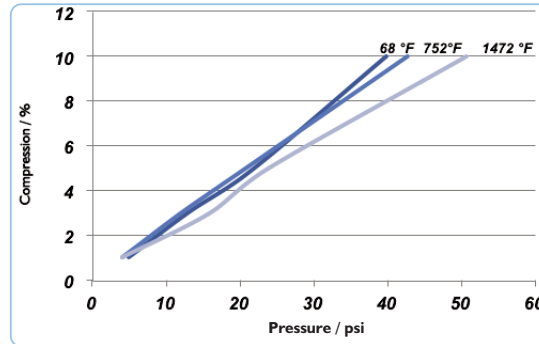
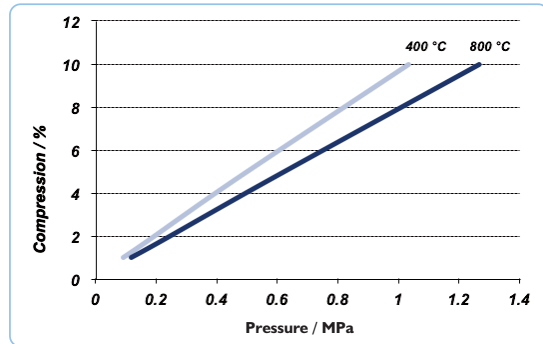
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Data sheet  
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**Thermal conductivity as a function of mean temperature**



**Compression behavior**



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