

## K-Shield® Felts

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SDS: 258

### Product Description

K-Shield Felt products are produced from premium, cleaned Kaowool high-purity fibers and a special thermosetting binder system in a unique paper-making process. The cleaning process dramatically improves the thermal conductivity, insulating value, and vibration resistance of the felt, while also making it an ideal product for die-cutting, fabrication, and handling. K-Shield Felts are both compressible and resilient, while exhibiting excellent flexibility and handling strengths. The special binder system eliminates smoke problems and allows for minimal off-gassing. Due to their unique semi-rigid yet flexible form, K-Shield Felts offer some special properties in comparison to traditional blankets and papers.



The standard K-Shield Felt, K-Shield Felt LS, and K-Shield Felt AG are premium, low-shot products produced from cleaned high-purity ceramic fibers. The K-Shield Felt LS is a very clean, lower-shot product developed for those very demanding applications. These products have very low thermal conductivities and exhibit excellent vibration resistance.

The K-Shield Felt AG is designed specifically for aerospace insulation applications and is approved for both the BMS9-19 and AMS 3680-Rev. C specifications. These approvals include meeting specific tests related to optimum performance in aerospace insulation applications.

### Features

- Extremely low thermal conductivity and heat storage
- Excellent flexibility with good handling strength for fabrication and die-cutting
- High temperature stability
- Low organic binder content with minimal off-gassing
- Low shot (un-fiberized material) content
- Lightweight, yet resilient
- Continuous use limit of 2300°F (1260°C)

### Applications

- Automotive heat shields and muffler insulation
- Aerospace insulation
- High-temperature gasketing
- Commercial and domestic appliance insulation
- Expansion joints
- Parting agent in heat treating and metal working

### Chemical Properties

A small amount of organic binder will begin outgassing at approximately 500°F (260°C). Caution should be exercised during the initial heating. Adequate ventilation should be provided.

## K-Shield® Felts

Felt Product Name	<u>K-Shield</u>	<u>K-Shield LS</u>	<u>K-Shield AG</u>
Fiber Class	RCF	RCF	RCF
<b>Physical Properties</b>			
Color	tan	tan	tan
Continuous Use Temperature, °F	2300	2300	2300
Continuous Use Temperature, °C	1260	1260	1260
Classification Temperature, °F	2400	2400	2400
Classification Temperature, °C	1316	1316	1316
Melting Temperature, °F	3200	3200	3200
Melting Temperature, °C	1760	1760	1760
Density, pcf	6	6	6
Density, kg/m <sup>3</sup>	96	96	96
Tensile strength, psi	10-20	10-20	5-10
Tensile strength, Mpa	0.07-0.14	0.07-0.14	0.03-0.07
Fired Tensile strength, psi	5	5	5
Fired Tensile strength, Mpa	0.03	0.03	0.03
Fiber index, %	65-70	75-80	62-70
<b>Chemical Analysis, % weight basis after firing</b>			
Alumina, Al <sub>2</sub> O <sub>3</sub>	51	51	51
Silica, SiO <sub>2</sub>	49	49	49
Other	trace	trace	trace
Loss of Ignition, LOI	2-5	2-5	3 (max)
<b>Thermal Conductivity, BTU·in/hr·ft<sup>2</sup>, per ASTM C201</b>			
<u>Density, pcf</u>	<u>6</u>	<u>6</u>	<u>6</u>
500°F	0.41	0.39	0.4
1000°F	0.68	0.65	0.72
1500°F	1.15	1.02	1.12
2000°F	1.82	1.51	1.58
<b>Thermal Conductivity, W/m·K, per ASTM C201</b>			
<u>Density, kg/m<sup>3</sup></u>	<u>96</u>	<u>96</u>	<u>96</u>
260°C	0.06	0.06	0.05
538°C	0.1	0.09	0.1
816°C	0.16	0.15	0.16
1093°C	0.26	0.22	0.23

The values given herein are typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Therefore, the data contained herein should not be used for specification purposes. Check with your Morgan Advanced Materials office to obtain current information.

## K-Shield® Felts

### Standard Sizes and Availability

<b>Product</b>	<b>Thickness, in (mm)</b>	<b>Width, In (mm)</b>	<b>Linear Ft/Roll (M/Roll)</b>	<b>Sq Ft/Carton (Sq M/Carton)</b>
K-Shield Felt K-Shield Felt LS	¼ (6.25)	24 (60)	50 (15)	200 (61)
K-Shield Felt K-Shield Felt LS	¼ (6.25)	48 (120)	50 (15)	200 (61)
K-Shield AG Felt	¼ (6.25)	24 (60)	50 (15)	200 (61)
K-Shield AG Felt	¼ (6.25)	48 (120)	50 (15)	200 (61)
K-Shield Felt K-Shield Felt LS	½ (13)	24 (60)	25 (8)	100 (30)
K-Shield Felt K-Shield Felt LS	½ (13)	48 (120)	25 (8)	100 (30)
K-Shield AG Felt	½ (13)	24 (60)	25 (8)	100 (30)
K-Shield AG Felt	½ (13)	48 (120)	25 (8)	100 (30)

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