

# Superwool<sup>®</sup> Plus and HT Papers

## Product Data Sheet



### Product Description

Superwool Paper is a unique family of paper products manufactured using our patented Superwool low biopersistent fibre in the non-woven matrix.

Special organic binders and fillers are used for giving them strength and distinct physical properties suitable for a varying range of applications. Superwool Plus and Superwool HT Papers offer excellent thermal performance over a wide temperature range.

Superwool Plus and Superwool HT Papers are an alternative to traditional solutions due to their unmatched properties of high refractoriness, elevated temperature capabilities and lower thermal conductivity. These papers have excellent non-wetting characteristics for the applications requiring direct contact with molten aluminium.

Superwool provides stability and resistance to chemical attacks. Exceptions include hydrofluoric acid, phosphoric acid and strong alkalis (i.e. NaOH, KOH). Superwool is unaffected by incidental spills of oil or water. Thermal and physical properties are restored after drying.

Please contact your regional Morgan Advanced Materials - Thermal Ceramics representative to support your application requirements.

### Features

- Low bio-persistence fibre
- Excellent thermal insulating performance
- Thin, flexible high-temperature insulation
- Immune to thermal shock
- Low heat storage
- Easily die-cut to form complex shapes for high-temperature gasketing
- Excellent tensile strength
- Low thermal conductivity
- Non-wetting to molten aluminium

### Applications

- Refractory back-up in various industrial applications
- Industrial and domestic appliance gasketing
- Glassware separators and Glass tank refractory back-up
- Non-Ferrous ingot mould liners
- Aluminium transfer system backup insulation
- Parting medium in induction furnaces
- Automotive heat shields and muffler insulation
- Insulation of various consumer goods like ovens, stoves, boilers, electric heaters
- Various molten metal handling applications in steel includes
  - Investment casting mould wrapping
  - Ladle Shroud and nozzle wrapping
  - Ladle back-up
  - Gasketing

### Environmental & Health Safety

Superwool low biopersistent fibres manufactured by Morgan Advanced Materials are not classified as carcinogenic by IARC or under any national regulations on a global basis. They have no requirements for warning labels under GHS (Globally Harmonised System for the classification and labelling of chemicals).

In Europe, Superwool fibres meet the requirements specified under Note Q of European Regulation EC/1272/2008 (on Classification, Labelling and Packaging of substances and mixtures). All Morgan Advanced Materials Superwool low biopersistent fibre products are therefore exonerated from classification and labelling as hazardous in Europe.

# Superwool<sup>®</sup> Plus and HT Papers

## Product Data Sheet



Properties	Superwool Plus Paper	Superwool HT Paper
Color	white	white
Classification Temperature, °C (°F), EN 1094-1	1200 (2192)	1300 (2372)
Continuous Use Temperature, °C (°F)	1000 (1832)	1150 (2102)
Density, kg/m <sup>3</sup> (pcf), EN 1094-1	180 - 250 (11 - 16)	180 - 250 (11 - 16)
Tensile strength, MPa (psi), EN 1094-1	0.45 (65)	0.35 (50)
Loss of Ignition, %	<10	<10
<b>Permanent Linear Shrinkage, %, after 24 hours, EN 1094-1</b>		
1200°C (2192°F)	<4	-
1260°C (2300°F)	-	<2
1300°C (2372°F)	-	<2
<b>Chemical Analysis, %</b>		
Alumina, Al <sub>2</sub> O <sub>3</sub>	trace	trace
Silica, SiO <sub>2</sub>	62 - 68	70 - 80
Calcium, CaO	26 - 32	18 - 26
Magnesia, MgO	3 - 7	<5
Other	<1	<3
<b>Thermal Conductivity, W/m·K, per ASTM C201</b>		
200°C	0.05	0.04
400°C	0.07	0.07
600°C	0.11	0.11
800°C	0.15	0.17
1000°C	0.21	0.24
1200°C	-	0.33
<b>Thermal Conductivity, BTU·in/hr·ft<sup>2</sup>, per ASTM C201</b>		
500°F	0.38	0.33
1000°F	0.66	0.67
1500°F	1.08	1.21
2000°F	1.67	1.95
2200°F	-	2.30

### Standard Product Dimensions and Availability

Superwool Plus and Superwool HT Papers are manufactured and available globally, but packaging, thickness, width and length vary by region.

Please contact your regional Morgan Advanced Materials - Thermal Ceramics representative to support providing specific packaging availability for your local business needs.

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product, and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials.