Product Information Sheet

Saffil® Bulk Fibers

DESCRIPTION

The Saffil® Bulk Fibers are high purity polycrystalline wools, designed for use in high temperature applications up to 1600°C (2912°F). Saffil fibers are produced by a unique solution extrusion process which ensures the highest level of chemical purity and lowest level of 'shot' (non-fiber particles). Available in a variety of grades, Saffil Bulk Fibers are used to overcome problems in demanding industrial environments and many other specialty applications.

The high purity, "mullite" and "high alumina" chemical compositions of Saffil Fibers provides excellent chemical stability, as they are more resistant to fluxing by acids, concentrated alkalis, and general chemical attack than refractory ceramic fibers. Saffil 72 Fibers (mullite chemical composition) have superior strength and resiliency. Saffil 97 Fibers (high alumina chemical composition) provide superior chemical stability and are particularly suited for use in highly reducing atmospheres and hydrogen furnace environments. The degree of crystallization and crystalline alpha alumina phase present within the fibers increases from LA, HA, and HX respectively.

GENERAL CHARACTERISTICS

Saffil® Bulk products have the following outstanding characteristics:

- High temperature stability (up to 1600°C (2912°F))
- Low thermal conductivity
- Virtually 'shot' free
- Resistant to thermal shock
- High purity & low silica chemical composition provides superior resistance to chemical attack
- Easily reprocessed
- Insoluble in water

Information on other applications is available upon request. Any new and/or special use of these products, whether in an application listed in our literature, is advised to be submitted to our Alkegen Application Engineering department for review and guidance on material selection.

TYPICAL APPLICATIONS

- Specialty Reinforcement fiber for high temperature cements, mastics, mortars, and coatings
- Aerospace heat shields and tiles
- Expansion joint packing
- Loose insulating fill for voids
- Raw material used to produce high temperature polycrystalline wool blankets and modules
- Raw material used by vacuum formers and wet process forming to increase the maximum use temperature of boards, vacuum formed shapes, and papers

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TYPICAL PRODUCT PARAMETERS

	Saffil 72 Fiber	Saffil 97 LA Fiber	Saffil 97 HA Fiber	Saffil 97 HX Fiber
Physical Properties				
Color	White	White	White	White
Classification Temperature*	1600°C (2912°F)	1600°C (2912°F)	1600°C (2912°F)	1600°C (2912°F)
Melting Point	> 1870°C (3400°F)	> 1870°C (3400°F)	> 1870°C (3400°F)	> 1870°C (3400°F)
Mean Fiber Diameter	2 -3.5 Microns	3 - 4 Microns	3 - 4 Microns	3 - 4 Microns
Typical Fiber Index** (wt. %)	> 95%	> 99%	> 99%	> 99%
Chemical Properties				
Typical Chemical Analysis (wt. %)				
Al_2O_3	72 - 75	95-97	95-97	95-97
SiO_2	25 - 28	3-5	3-5	3-5
Trace Elements	< 0.5	< 0.5	< 0.5	< 0.5
Thermal Properties				
Permanent Linear Shrinkage (EN 1094-1)				
After 24 Hour Soak @ 1600°C (2912°F)	<2.5%	< 4.0%	< 2.0%	< 1.0%

*The Classification Temperature is not a definition of the operational temperature use limit of these products, especially when long-term physical or dimensional stability is a factor. The classification temperature is the temperature at which irreversible linear shrinkage does not exceed a given value after a 24-hour heat soak test. For applications where long-term stability is not a requirement, products may be successfully used at temperatures well in excess of their Classification Temperature.
For continuous use applications requiring long-term stability, routine practice is to utilize materials in respect to their continuous use temperature. For polycrystalline wools, the Classification Temperature is also representative of it's Continuous Use Temperature. The Continuous Use Temperature is a recommended maximum operating temperature for the material usage under clean, oxidizing atmosphere conditions. For certain application conditions (specific chemical contaminants, reducing atmospheres, etc.), the Continuous Use Temperature may be reduced.
**Fiber Index is the amount of material (by weight %) that is fiber vs. "shot". Shot is globular grains of glass and is an undesired biproduct of the fiberization process. Saffil Blankets have extremely high fiber index, yielding a very clean polycrystalline wool blanket.
Data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes. For assistance or further clarification, please contact your nearest Alkegen Application Engineering office.

Availability

Saffil 97 Bulk Fibers are available as standard in 5 kg (11 LB) polythene bagged bales. Saffil 72 Bulk Fibers are available as standard in 25 LB (11.3 kg) polythene bagged bales.

HEALTH AND SAFETY INFORMATION

Saffil Fibers were designed with the expert advice of toxicologists to minimize the potential for biological activity. The fibers are produced in a novel spinning process from a viscous aqueous solution to give a narrow diameter distribution. They are all then subjected to a controlled heat treatment to develop a polycrystalline microstructure.
A Material Safety Data Sheet has been issued describing the health, safety, and environmental properties of this product, identifying the potential hazards and giving advice on handling precautions and emergency procedures. This must be consulted and fully understood before handling, storage, or use.

The test data shown are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.
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Product Information Sheets are periodically updated by Alkegen. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

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Alkegen
Headquarters
5215 N. O'Connor Blvd, Suite 2300
Irving, TX 75039
Telephone: 716-768-6500
Website: www.alkegen.com
Email: info@alkegen.com