



Alumina Bulk Fiber Type ALBF

General Information

ZIRCAR Ceramics' Alumina Bulk Fibers are high-purity sol-gel-derived polycrystalline Al_2O_3 fibers (PCW). These fibers exhibit useful properties in thermal insulation and advanced material applications with temperatures as high as 1825°C (3317°F).

A minor addition of silica is made to the fiber, modifying its microcrystalline structure and acting as a grain growth inhibitor. In addition, their high-alpha Al_2O_3 content contributes toward their superior dimensional stability and extreme chemical inertness. ALBF exhibits light weight, low thermal conductivity, low thermal mass and immunity to thermal shock

Three grades of Alumina Bulk Fibers are available, making them useful in a multitude of demanding applications.

Type ALBF is the long, bulk form of this fiber.

Type ALBF-1 has been shortened and is suitable for vacuum-forming into medium-density shapes.

Type ALBF-2 is the shortest standard variety and is suitable for incorporation into high-density vacuum-formed products and for reinforcement of ceramic matrix composites.



Characteristics & Properties

Type	ALBF	ALBF-1	ALBF-2
Composition, %			
Al_2O_3		97	
SiO_2		3	
Organics		0	
Alpha Alumina, wt %		> 50	
Color		White	
Fiber Density, g/cc (pcf)		3.4 (212)	
Shot Content		Nil	
Melting Point, °C (°F)		> 2000 (> 3632)	
Specific Heat, J/kg °K (BTU/lb °F)		1047 (.25)	
Linear Shrinkage, %			
1 hr at 1538°C (2800°F)		2	
1 hr at 1650°C (3002°F)		4	
Mean Fiber Diameter, microns		3-5	
Bulk Density, g/cc (pcf)	0.096 (6)	0.192 (12)	0.32 (20)
Fiber Length, cm (in.)	5-10 (2-4)	0.32 (.125)	0.21 (0.0825)

ZIRCAR Ceramics, Inc.

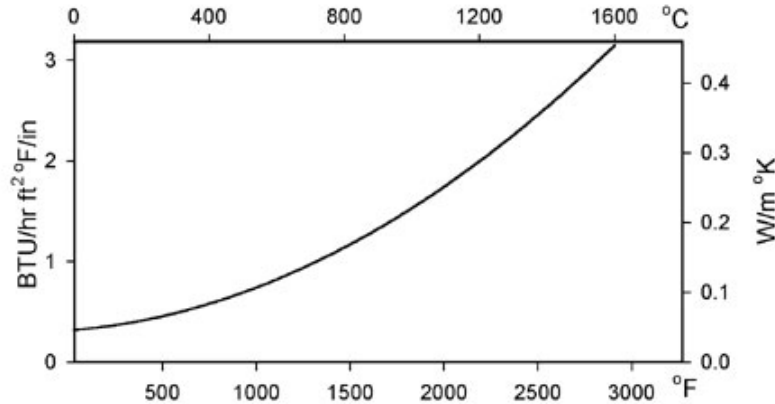
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Characteristics & Properties Continued

Thermal Conductivity of ALBF at 6 pcf packed density



The data presented herein is intended to help the user to determine the appropriateness of this material for their application. This data is a nominal representation of this product's properties and characteristics and therefore should not be used in preparing specifications.

Suggested Applications

Vacuum-forming of low-density, high-alumina fibrous ceramic materials for use to 1825°C (3317°F).

Backup thermal insulation in furnaces and thermal process systems operating to temperatures exceeding 2000°C (3632°F).

Additive in ceramic-fiber vacuum-formed products to improve refractoriness.

Furnace insulation packing around sight tubes, ports, expansion joints, and masonry cracks.

Toughening agent in low-mass high-alumina refractories.

Reinforcement of ceramic and metal matrix composites.

Strengthening additive for tape cast ceramic substrates.

Availability of Standard Bulk Fiber

ITEM #	DESCRIPTION
D3169	ALBF, 10 KG
A17501	ALBF-1, 1 LB

To Order

Standard fiber: order online or specify quantity, item # and description.

Standard bulk fiber is available for immediate shipment from stock.

Custom preparations such as ALBF-2, fibers with low-alpha Al₂O₃ content, and fiber milled to small aspect ratios, are available. Custom packaging is also available upon request.



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