Zircar

Advanced Fibrous Ceramics

ZO

Unstabilized Zirconia Felt, Cloth & Bulk Fiber

The Unrivaled Industry Leader of ZrO_2 Insulation

Six Different Product Formats Offered

- **Thin and Thick Felt**
- **Tricot Knit Cloth**
- **Square Weave Cloth**
- **Satin Weave Cloth**
- **Bulk Fiber**

ZO Features

- No Phase Stabilizing
- Low Thermal Conductivity
- Designed for Uses in Extremely Corrosive, High Temperature Environments
- Extreme High Temperature Stability
- No Outgassing
- Usable in Multiple Atmospheres
- Handleable

The Zircar Fibrous Ceramics Advantage
Low Mass,
Low Heat Storage &
Low Thermoconductivity
means
High Thermal Shock Resistance,
High Insulation Performance,
Higher System Efficiency &
Lower Energy Costs

Extremely High Use Temperature... Only Trace of Stabilizer Concentration...

Flexible cloths, felts, and bulk fiber insulation for applications to 2500 °C.

Product Information

Zircar Zirconium Oxide Type ZO is our purest zirconia product available. Our unique process for manufacturing yttria-stabilized zirconia cloths and felts at our plant in Florida, NY, USA, is also used in the production of pure zirconia refractory fibers and cloths without stabilizers. For those processes which are intolerant of yttria, these unstabilized pure zirconia fiber products provide much of the same high performance insulating benefits. ZO materials are gray and contain organics for handleability. After heat treating, they will appear white and will contain no organics.

Pure zirconia cloth is used as high temperature insulation for advanced energy systems.

Our high purity zirconia fiber and textiles are offered in six different standard product forms:

ZOBF bulk fiber
ZOF in two thicknesses
ZOK-15 tricot knit cloth
ZOW-15 square weave cloth
ZOW-30 satin weave cloth

For more information,
phone: (845) 651-3040
email: sales@zircarzirconia.com
website: www.zircarzirconia.com

Properties & Characteristics

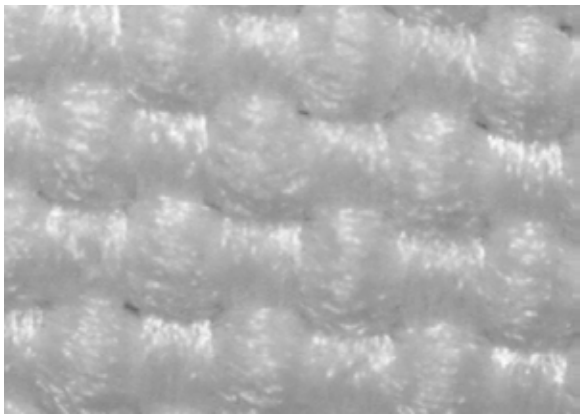
Properties (Nominal)	**ZOF-100 Charred**
Melting Point °C (°F) [1]	2590 (4694)
Loss on Ignition, Wt% 1 hr at 1650 °C (3002 °F)	16
Linear Shrinkage, % 1 hr. @ 1650 °C (3002 °F)	14
Calcined Chemical Composition (Nominal)	
Oxide	**Wt%**
ZrO_2 [2]	99+
SiO_2	0.22
CaO	0.04
Na_2O	0.02
Y_2O_3	<0.001

[1] Melting point is dependent on variables such as the chemical environment and stresses; both thermal and mechanical.

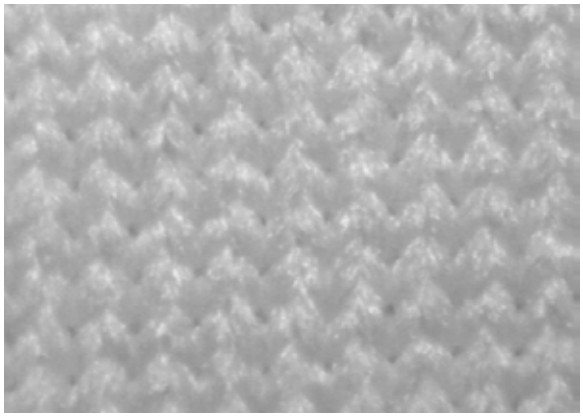
[2] 1-2% weight hafnia (HfO_2) occurs naturally with zirconia (ZrO_2) and does not affect performance.

Product Micrographs

Face of Pure Zirconia Knit Cloth, ZOK-15.



Pure Zirconia Woven Cloth, ZOW-15.



Back of Pure Zirconia Knit Cloth, ZOK-15.

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Facts About Our Zirconium Oxide

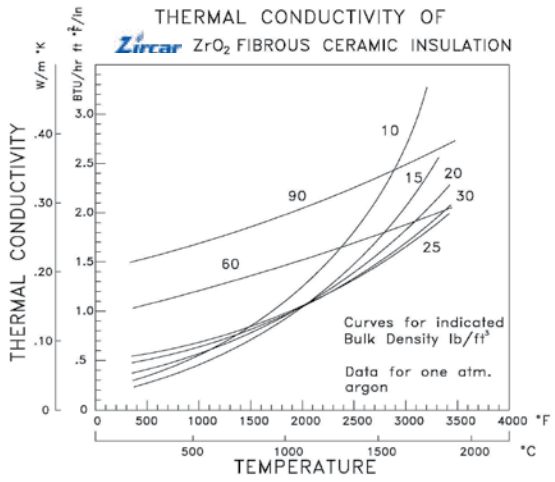
- Zircar ZrO_2 fibrous ceramics are manufactured using the original ZIRCAR Process which was devloped by Bernie H. Hamling (BHH) while at Union Carbide Corp. in Sterling Forest, NY. In 1974 BHH purchased the patents for the process and began ZIRCAR Products, Inc. Over the years the name ZIRCAR became synonymous with high quality advanced fibrous ceramics. In July 2000, Zircar Zirconia Inc. purchased Bernie's zirconia business and to this day still uses his original process. Although Bernie is no longer with us, we think of him often and are grateful for the opportunity to continue his legacy in the ceramics industry. Thank you BHH.

- At very high temperatures in vacuum and inert or reducing atmospheres, zirconia loses a small amount of oxygen. The reaction results in a color change from white to gray but most other properties remain essentially unchanged and insulation effectiveness is not impaired.

- 1 to 2% hafnium oxide, HfO_2, occurs naturally with zirconium oxide. Hafnia is sometimes referred to as zirconia's twin because of structrual similarities.

- Zirconia has the lowest thermal conductivity of any commercial refractory and is one of the most studied ceramic materials in the world.

- Upon heating unstabilized zirconia undergoes disruptive phase changes. At room temperature unstabilized ZrO_2 adopts a monoclinic crystal structure and transitions to tetragonal and cubic at higher temperatures.



Product Samples

FREE SAMPLES

Call: 845-651-3040

email: sales@zircarzirconia.com

Product Type	Item #
ZOF-50	SAMPLE-E04A
ZOF-100	SAMPLE-E04B
ZOK-15	SAMPLE-E04C
ZOW-15	SAMPLE-E04D
ZOW-30	SAMPLE-E04E
ZOBF	SAMPLE-E04F

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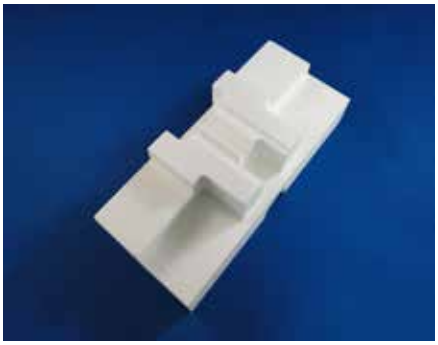
Other Products & Capabilities

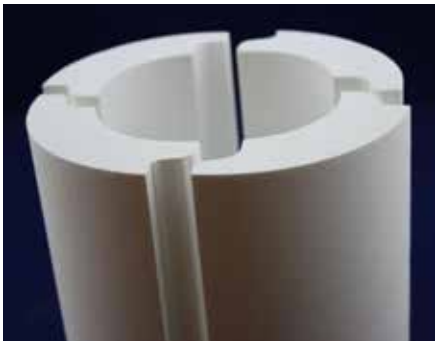
Customers who order High Purity Zirconia Textiles and Bulk Fiber, may be interested in:

- Yttria Stabilized Zirconia Felts and Textiles
- High Purity Alumina and Yttria Products
- Zirconia Cement and Rigidizer
- Yttria Stabilized Zirconia Bulk Fiber
- Ceria Felts, Textiles and Bulk Fiber

Zircar manufactures and machines custom fibrous insulation shapes to your design specifications. Our capabilities include:

- 3D CNC Machining
- Layered Configurations
- Lap Joined Boards and Cylinders
- Diamond Wire Splitting of Cylinders



Standard Product Sizes & Ordering

Please contact our Sales Department for pricing and availability.

To Place an Order

Call: 845-651-3040
email: sales@zircarzirconia.com

ZO

	Item Number					
Size	**ZOF-50**	**ZOF-100**	**ZOK-15**	**ZOW-15**	**ZOW-30**	**ZOBF**
18″x 24″	E04A01	E04B01				
12″x 12″			E04C01	E04D01	E04E01	
1 Lb						E04F01

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