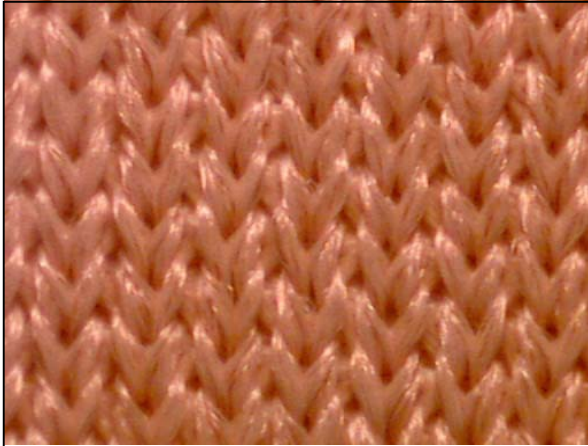




Zircar Zirconia, Inc.  
"Manufacturer of the original ZIRCAR products" ©

## CERIA FIBERS and TEXTILES TYPE CE



Face of Tricot Knit Cloth, Type CeK-15, at 60X.

### FEATURES

- High Purity
- High Temperature Stability
- Low Thermal Conductivity
- Excellent Thermal Shock Resistance
- No Outgassing
- Six Different Product Formats Offered
- Available 'Off the Shelf'

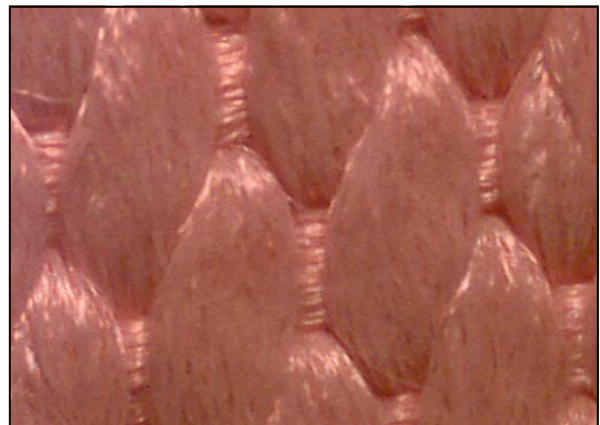
Ceria (cerium dioxide),  $\text{CeO}_2$ , has a very high surface area and is ideal as a catalyst support. Our ceria fibers and textiles are made by the same unique Zircar process used for manufacturing yttria-stabilized zirconia textiles. Our high purity ceria fiber and textiles are offered in six different standard product forms; bulk fiber Type **CeBF**, two felts Types **CeF-50** and **CeF-100** and three types of knit cloth Types **CeK-15**, **CeW-15** and **CeW-30**.

### APPLICATION INFORMATION

Ceria Bulk Fiber and Felt are used in molten carbonate fuel cells.  
Ceria Knit Cloth is used for product development of gas sensors.



Square Weave Cloth, Type CeW-15, at 60X



Satin Weave Cloth, Type CeW-30, at 60X

Zircar Zirconia, Inc.  
PO Box 287  
Florida, NY 10921-0287  
USA

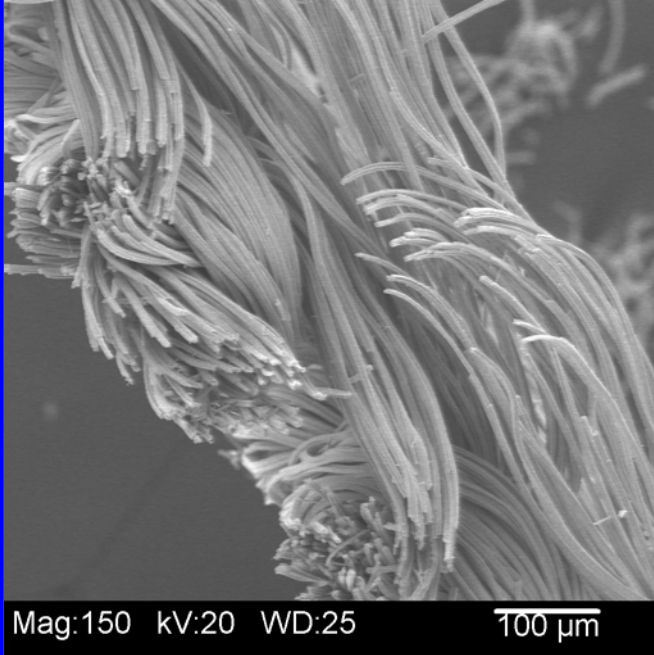
Tel: 845-651-3040  
Fax: 845-651-0074  
email: [sales@zircarzirconia.com](mailto:sales@zircarzirconia.com)  
web: [www.zircarzirconia.com](http://www.zircarzirconia.com)

Product Data  
Bulletin #E-05  
January 2004  
Page 1 of 3

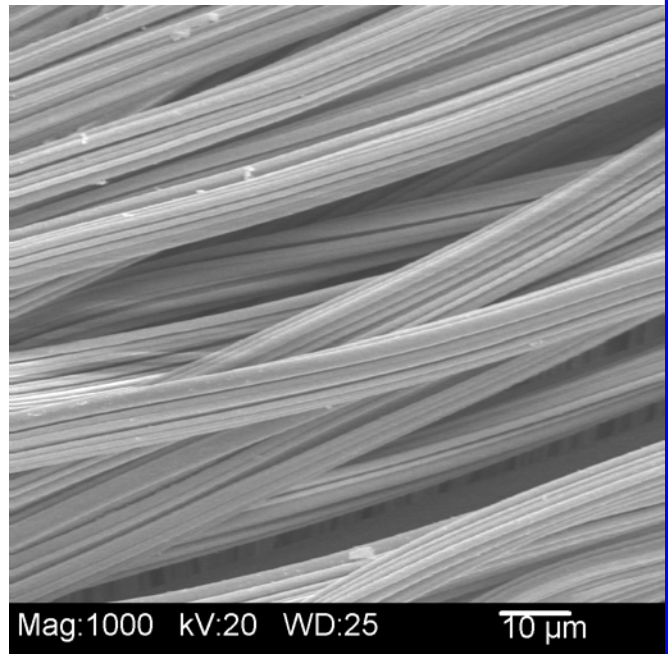


Zircar Zirconia, Inc.  
"Manufacturer of the original ZIRCAR products" ©

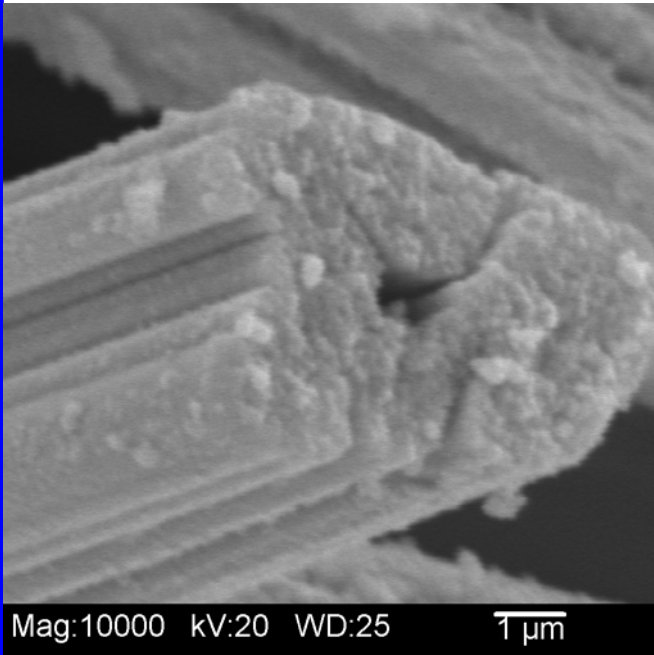
## CERIA FIBERS and TEXTILES TYPE CE



Ceria Cloth Type **CeK** has the unique advantage of being a knit structure. This structure allows irregular shapes to be cut that do not unravel or fray. The SEM photomicrograph to the left shows the cut edge of Type **CeK-15** and the individual filaments of the tricot knit threads.



The SEM photomicrograph above shows individual fibers arranged mostly parallel to each other in a Type **CeK-15** thread. These filaments show the serrated nature of all "Zircar Process" fibers.



The SEM photomicrograph to the left shows the end of an individual fiber in Type **CeW-15**. The individual submicron crystallites which make up the near theoretical density fiber can be seen clearly.

Zircar Zirconia, Inc.  
PO Box 287  
Florida, NY 10921-0287  
USA

Tel: 845-651-3040  
Fax: 845-651-0074  
email: [sales@zircarzirconia.com](mailto:sales@zircarzirconia.com)  
web: [www.zircarzirconia.com](http://www.zircarzirconia.com)

Product Data  
Bulletin #E-05  
January 2004  
Page 2 of 3



Zircar Zirconia, Inc.  
 "Manufacturer of the original ZIRCAR products" ©

## CERIA FIBERS and TEXTILES TYPE CE

### PROPERTIES & CHARACTERISTICS

	CeF-100	CeW-30	CeW-15	CeK-15
Nominal Composition, Wt%				
CeO <sub>2</sub>	99+	99+	99+	99+
Al <sub>2</sub> O <sub>3</sub>	0.05	0.05	0.05	0.05
SiO <sub>2</sub>	0.04	0.04	0.04	0.04
Fe <sub>2</sub> O <sub>3</sub>	0.03	0.03	0.03	0.03
Melting Point, °C (°F)	2590 (4694)	2590 (4694)	2590 (4694)	2590 (4694)
Bulk Porosity, %	96	91	91	90
Bulk Density, g/cc (pcf)	0.27 (17)	0.67 (42)	0.67 (42)	0.69 (43)
Tensile Strength, g/cm width (lb/inch width)	28 (0.16)	34 (0.19)	23 (0.13)	18 (0.10)
LOI, 1 hr at 950°C (1742°F), Wt%	0.3	0.3	0.3	0.3
Outgassing	Nil	Nil	Nil	Nil
% Shrinkage, 1 hour at 1650°C (3002°F)	6	9	7	7

### ORDERING INFORMATION

Type **CE** Fibers and Textiles are available in six standard product forms, which are listed in the table below with their ordering item number. Please contact our Sales Department for pricing and availability.

Standard Item Description	Ordering Item #
CeF-50, FELT, 12" X 12" X ~0.05"	E05A01
CeF-100, FELT, 12" X 12" X ~0.1"	E05B01
CeK-15, TRICOT KNIT CLOTH, 12" X 12" X ~0.015"	E05C01
CeW-15, SQUARE WEAVE CLOTH, 12" X 12" X ~0.015"	E05D01
CeW-30, SATIN WEAVE CLOTH, 12" X 12" X ~0.03"	E05E01
CeBF, BULK FIBER, 1 pound	E05F01

Zircar Zirconia, Inc.  
 PO Box 287  
 Florida, NY 10921-0287  
 USA

Tel: 845-651-3040  
 Fax: 845-651-0074  
 email: [sales@zircarzirconia.com](mailto:sales@zircarzirconia.com)  
 web: [www.zircarzirconia.com](http://www.zircarzirconia.com)

Product Data  
 Bulletin #E-05  
 January 2004  
 Page 3 of 3