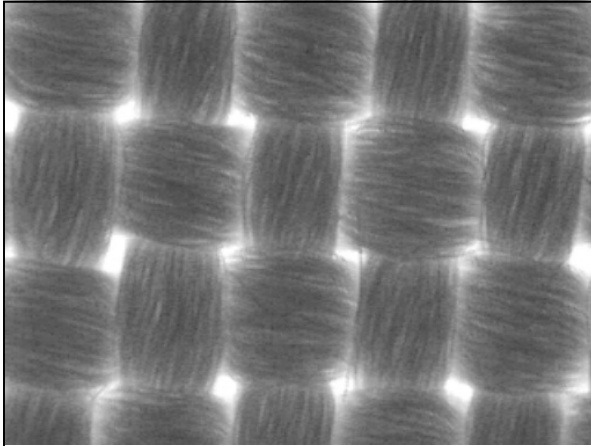




Zircar Zirconia, Inc.
"Manufacturer of the original ZIRCAR products" ©

YTTRIA FIBERS and TEXTILES TYPE Y



Woven Cloth, Type YW-15, originally at 60X.

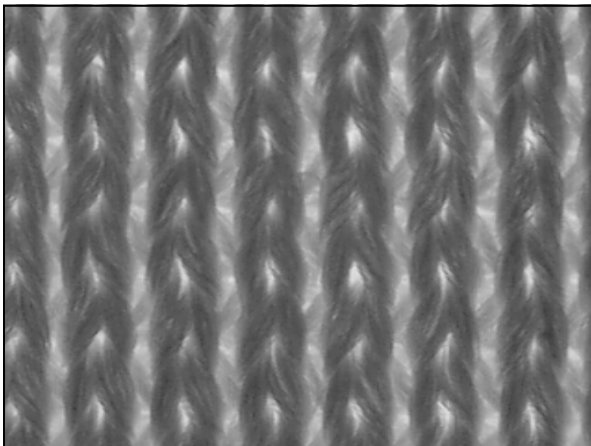
FEATURES

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

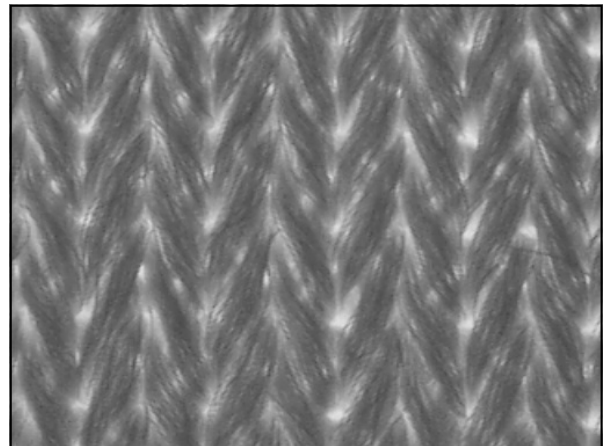
Yttria (yttrium oxide - Y_2O_3) is typically used as a stabilizer for zirconia. It is offered here in its pure and stable metal oxide form, which is not attacked by most molten metals, including lithium and titanium. Our high purity yttria fiber and textiles are offered in six different standard product forms; bulk fiber Type **YBF**, two felts Types **YF-50** and **YF-100** and three types of knit cloth Types **YK-15**, **YW-15** and **YW-30**.

APPLICATION INFORMATION

Yttria textiles are used in the development of large grain Rare Earth Barium Copper Oxide (REBCO) melt processed high temperature superconductors (HTS).



Type YK-15, Face, originally at 60X



Type YK-15, Back, originally at 60X

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

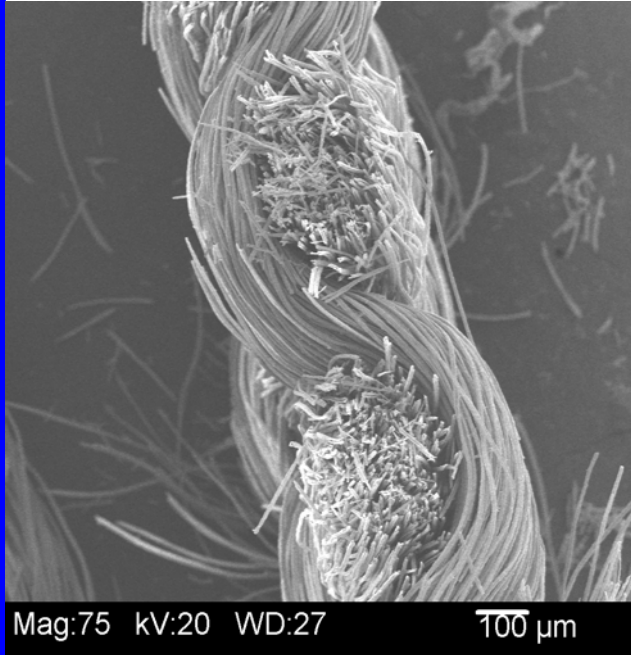
Tel: 845-651-3040
Fax: 845-651-0074
email: sales@zircarzirconia.com
web: www.zircarzirconia.com

Product Data
Bulletin #E-02
January 2004
Page 1 of 3

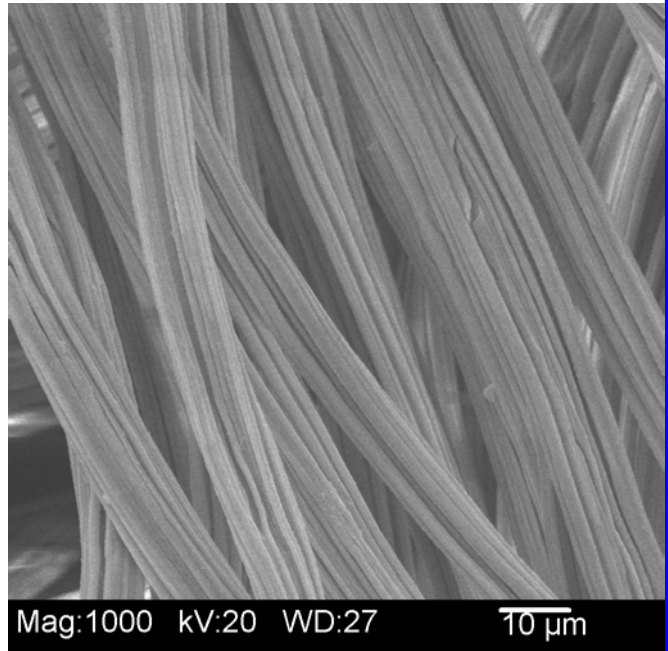


Zircar Zirconia, Inc.
"Manufacturer of the original ZIRCAR products" ©

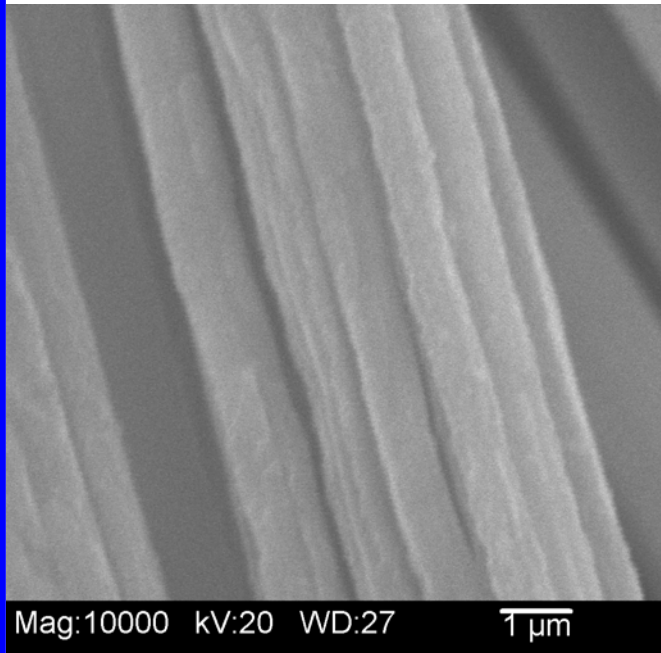
YTTRIA FIBERS and TEXTILES TYPE Y



The SEM photomicrograph on the left shows a view of the cut edge of Type **YW-15**, square weave yttria cloth. Also known as a 'plain weave' the square weave results from a simple, over one - under one, weaving pattern. Type **YW-30** (not shown) is a satin weave produced from an over four - under one weaving pattern similar to a twill.



The SEM photomicrograph above shows individual fibers of yttria knit cloth, Type **YK-15**, arranged mostly parallel to each other forming a thread in the tricot knit pattern.



The SEM photomicrograph to the left shows yttria knit cloth, Type **YK-15**, originally taken at 10,000X. This fiber surface clearly show the serrated nature of all "Zircar Process" fibers. Fiber diameter is approximately 6 microns

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

Tel: 845-651-3040
Fax: 845-651-0074
email: sales@zircarzirconia.com
web: www.zircarzirconia.com

Product Data
Bulletin #E-02
January 2004
Page 2 of 3



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

YTTRIA FIBERS and TEXTILES TYPE Y

PROPERTIES & CHARACTERISTICS

	YF-100	YW-30	YW-15	YK-15
Nominal Composition, Wt%				
Y ₂ O ₃	99+	99+	99+	99+
Fe ₂ O ₃	0.02	0.02	0.02	0.02
SiO ₂	0.02	0.02	0.02	0.02
Al ₂ O ₃	.003	.003	.003	.003
Melting Point, °C (°F)	2410 (4370)	2410 (4370)	2410 (4370)	2410 (4370)
Bulk Porosity, %	93	90	91	92
Bulk Density, g/cc (pcf)	0.37 (23)	0.51 (32)	0.46 (29)	0.42 (27)
Tensile Strength, g/cm width (lb/in width)	198 (1.11)	30 (0.17)	16 (0.09)	18 (0.10)
Loss on Ignition, 1 hr at 1650°C (3002°F), Wt%	8	8	13	6
Outgassing	Nil	Nil	Nil	Nil
% Shrinkage, 1 hr at 1650°C (3002°F)	9	14	11	13

ORDERING INFORMATION

Type Y 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 Sizes	Item Number
YF-50, FELT, 12" X 12" X ~0.05"	E02A01
YF-100, FELT, 12" X 12" X ~0.1"	E02B01
YK-15, TRICOT KNIT CLOTH, 12" X 12" X ~0.015"	E02C01
YW-15, SQUARE WEAVE CLOTH, 12" X 12" X ~0.015"	E02D01
YW-30, SATIN WEAVE CLOTH, 12" X 12" X ~0.03"	E02E01
YBF, BULK FIBER, 1 pound	E02F01

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

Tel: 845-651-3040
 Fax: 845-651-0074
 email: sales@zircarzirconia.com
 web: www.zircarzirconia.com

Product Data
 Bulletin #E-02
 January 2004
 Page 3 of 3