Typical Property Ranges for Ceramic Fibers

Property	Non-oxide fibers (a)	Oxide fibers (b)
Tensile strength (GPa)	1.5-4.0 (220-580 ksi)	1.4-3.0 (260-430 ksi)
Elastic moduli (GPa)	180-400 (26-58 Msi)	150-380 (22-55 Msi)
Strain to failure (%)	0.6-1.8	——
Coefficient of thermal expansion (ppm/C)	3-5	3-9
Thermal conductivity at 1500°C (2732°F) (W/mK)	up to 40 (up to 23 Btu/hr foot °F)	——

(a) Representative properties for polycrystalline and amorphous Si-based fibers that contain one or more of the following elements: carbon, nitrogen or boron
(b) Representative properties for polycrystalline oxide fibers consisting of predominantly alumina
Source: *Ceramic Fibers and Coatings: Advanced Materials for the Twenty-First Century,* National Research Council, National Academy Press, 1998