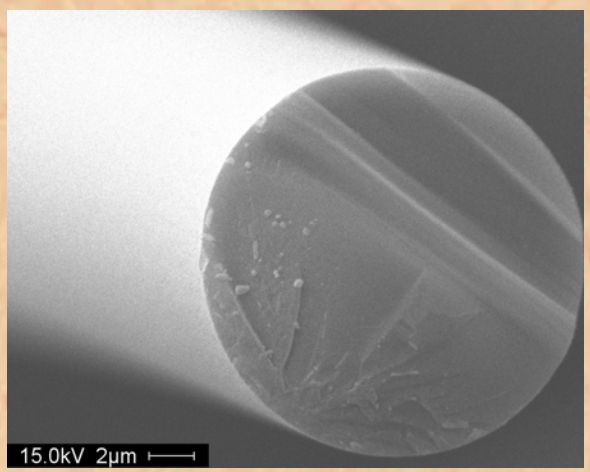
MATECH

ANNOUNCING COMMERCIAL AVAILABILITY

SiNC-1400X Chopped Fiber Staple

SiNC (Silicon Nitride Carbide) fibers are melt spun in continuous 500-filament tow. SiNC fibers exhibit excellent creep resistance and are chemically stable to 1350˚C with less than 2% oxygen content.



100% Amorphous (Glassy)
Fibers In Chopped Fiber Staple

Diameter	14-18 µm
Tensile Strength	1.5 – 2.0 GPa
Young's Modulus	~150 GPa
Density	2.48g/cc
Dielectric Constant*	~2

*between 10-18 GHz

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Non-Woven SiNC/SiNC CMCs

Figure 1: SEM Photomicrograph of SiNC/SiNC CMC failure.

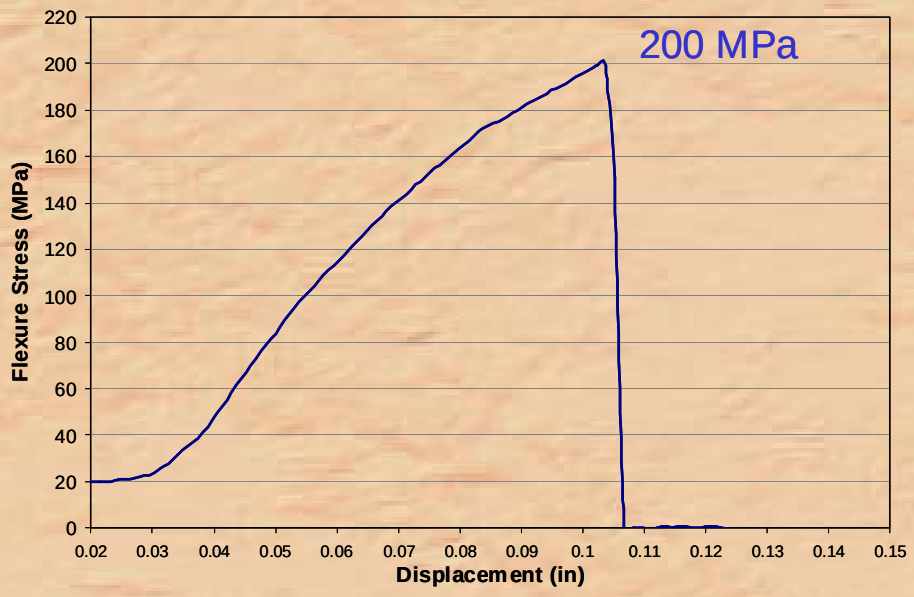

Figure 2: MOR Stress-Strain curve for SiNC/ SiNC CMC failure.

SiNC 1400X Chopped Fiber Stable can be utilized for the fabrication of low cost, non-woven ceramic matrix composites (CMCs). In Figure 1 (above), a fracture cross-section is shown in which significant fiber pullout is observed, indicative of good CMC behavior. Non-woven CMCs typically have lower fiber volumes (12-25%) compared with woven fiber CMCs (30-45%). In Figure 2, an MOR stress-strain curve is shown for a SiNC/SiNC CMC with approximately 15% fiber by volume.