Specialty Materials, Inc.

CARBON MONOFILAMENT

Specialty Materials is now offering a 1.3 mil diameter (.0013” / 34 µm) glassy carbon monofilament which has optimal properties for use as microelectrodes for electrochemical analysis. These carbon monofilament microelectrodes can be coated with ionic polymers to enhance selectivity. As microelectrodes, carbon monofilaments can be used in various measurement techniques, including voltametry, high-speed chronoamperometry, and chronopotentiometry.

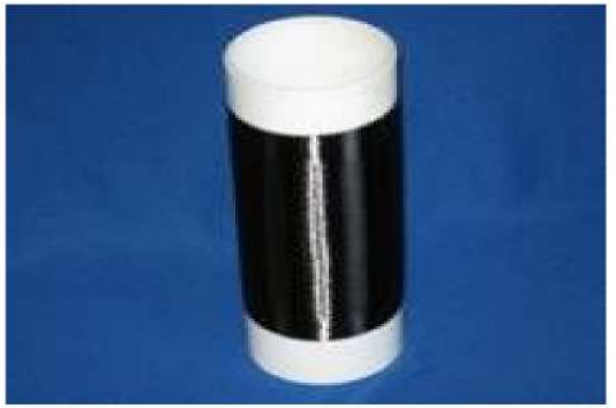
SMI developed its carbon monofilament as a substrate for its SCS silicon carbide fibers. As our production of SCS fibers has increased, we have expanded our carbon monofilament capabilities and made process improvements that now allow us to offer this to others. Typical applications for carbon monofilament include in vivo electrochemistry, diffusion/boundary layer analysis, metal recovery, and saline electrochemistry.

Specific benefits include the following:

-Small size
-Rapid response time
-Small IR drop
-Better radial conduction than graphitic carbon
-Slower rate of scale formation than platinum
-Large ratio of faradic-to-residual current

TYPICAL PROPERTIES

Diameter:	0.00136 +/- 0.0001" (34.5 +/- 2.5 µm)
Tensile Strength:	125 ksi (0.86 GPa)
Tensile Modulus:	6 msi (41.5 GPa)
Electrical Resistivity:	3.6 x 10^{-3} ohm cm
Density:	1.8 g/cc



SCS Silicon Carbide Fiber
SCS Silicon Carbide Fiber Properties
SCS Silicon Carbide Fiber Technical Presentation
Testing of SCS-6 Fibers