

LCP Monofilament

Extruded Product

Overview-

Since its invention in the 1970's, magnetic resonance imaging (MRI) has become an industry standard medical tool for diagnosis and treatment. However, procedures requiring catheterization would still rely on x-ray as a means to guide the catheter due to the MRI-incompatibility of the metal construction catheter. X-ray guided procedures thus exposed patients and doctors to ionizing radiation. More recently, though, there has been a refocused effort towards eliminating the radiation component from catheter procedures.

At Zeus, we respond to challenges and have once again with our MRI-compatible LCP monofilament fiber. With exceptional tensile strength, our LCP monofilament is ideally suited for catheter braiding reinforcement allowing catheter construction without the use of metals such as stainless steel. This advanced monofilament also provides excellent torque response, pushability, and distal end deflectability of the catheter.



FLEXURAL MODULUS



TENSILE STRENGTH



ABRASION RESISTANCE



LCP Monofilament can be used as an MRI-compatible non-metallic alternative for catheter braiding.

APPLICATIONS

- Braiding monofilament for catheters
- Replacement for stainless steel, nitinol, and tungsten braiding

CAPABILITIES AND SIZING

- Monofilament:
 - Round:
 - » 0.002" - 0.006" (0.051 - 0.152 mm)
 - Rectangle:
 - » 0.001" x 0.003" (0.025 x 0.076 mm)
- Additional custom monofilament shapes

KEY PROPERTIES

- MRI-compatibility
- Excellent torquability and distal end deflectability
- Can be wound on Steeger and Wardwell bobbins and DIN 160 spools
- Minimal fraying compared to other aramid fibers
- Class VI approved resins available
- Autoclavable



LCP Monofilament

Available in rectangle and round geometries.

LCP MONOFILAMENT vs. STAINLESS STEEL					
Material	Zeus LCP Monofilament			304 Stainless Steel (annealed)	Stainless Steel (spring tempered)
Shape	Rectangle	Round			
Dims. (in. / mm)	0.001 × 0.003 / 0.025 × 0.076	0.002 / 0.051	0.003 / 0.076	0.003 / 0.076	0.003 / 0.076
Avg. Tensile Strength (GPa)	0.75	1.30	1.20	1.00	2.30
Avg. Elongation at Break (%)	1.5	1.6	1.7	31.1	1.7
Avg. Tensile Modulus (GPa)	55.0	75.0	75.0	134.5	202.7

*SIZE RANGES/CAPABILITIES

Units	Size Range
Dimension (round; in. / mm)	0.002 - 0.006 / 0.051 - 0.152
Dimension (rectangle; in. / mm)	0.001 × 0.003 / 0.025 × 0.076

*Ask us about other sizing and profile options.

ZEUS AND STEEGER USA BRAIDING

Steeger USA recommends KL80D carriers for braiding Zeus LCP monofilament. Steeger USA has already taken the first steps to get you to your braiding goals faster. For Zeus' 0.003" (0.076 mm) LCP monofilament using the KL80D, Steeger recommends:

- Swivel head rollers
- Triple compensation rollers
- 0.5 mm ratchet spring
- 0.5 mm tension spring

Ask about Steeger's maintenance program to help you maintain consistent PPI and braid angle, increase production, and minimize breakage.

For more information about LCP monofilament, visit www.radiation-free.com.

Steeger USA is a Machine Solutions Inc. company.

