

# LCP Monofilament

Extruded Product

## Overview-

Since its invention in the 1970s, magnetic resonance imaging (MRI) has become a standard tool for medical diagnosis and treatment. However, catheter-based procedures still rely on X-ray guidance due to metallic components that are incompatible with MRI, exposing patients and clinicians to ionizing radiation. More recently, however, there has been renewed focus on eliminating radiation from these procedures.

To meet this challenge, Zeus developed an MRI-compatible LCP monofilament fiber engineered for advanced catheter construction. With exceptional tensile strength, this high-performance braid reinforcement material helps eliminate the need for metallic components such as stainless steel, enabling device designers to achieve MRI compatibility while maintaining precise torque response, pushability, and enhanced distal-end deflectability.



*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:
    - » 0.001"– 0.006" (0.025 mm – 0.152 mm)
  - Rectangle:
    - » 0.001"–0.008" (0.025 mm x 0.203mm)
- Additional custom monofilament shapes

## KEY PROPERTIES

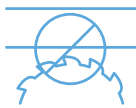
- MRI-compatibility
- Excellent torquability and distal end deflectability
- Can be wound on Steeger and Wardwell bobbins and DIN 160 spools
- Minimal fraying compared to other aramid fibers
- Class VI approved resins available
- Autoclavable



FLEXURAL MODULUS



TENSILE STRENGTH



ABRASION RESISTANCE



# LCP Monofilament

Available in rectangle and round geometries.

LCP MONOFILAMENT vs. STAINLESS STEEL					
	ZEUS LCP MONOFILAMENT			304 STAINLESS STEEL (ANNEALED)	STAINLESS STEEL (SPRING TEMPERED)
SHAPE	Rectangle	Round	Round	Round	Round
DIMENSIONS	0.001" × 0.003" (0.025 mm × 0.076 mm)	0.002" (0.051 mm)	0.003" (0.076 mm)	0.003" (0.076 mm)	0.003" (0.076 mm)
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

LCP MONOFILAMENT CAPABILITIES	
ROUND	RECTANGLE
0.001"– 0.006" (0.025 mm – 0.152 mm)	0.001"–0.008" (0.025 mm x 0.203mm)

## 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](http://www.radiation-free.com).

*Steeger USA is a Machine Solutions Inc. company.*

