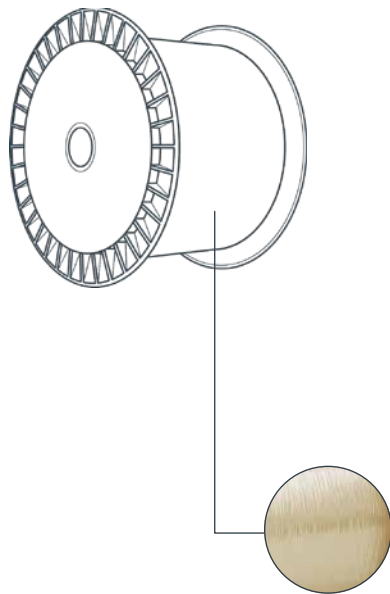




## Hydrogen Insensitive Core Graded-Index Multimode 50 $\mu\text{m}$ Optical Fiber

Silicone/PEEK Coating System:  
Part Number F80398



### Features

Improved Waveguide Resists Hydrogen Darkening

Graded-Index 50/125 Fiber Structure

Silicone/PEEK Coating System

### Benefits

Minimizes permanent losses due to hydrogen ingress in harsh conditions

Compatible with most commercially available Distributed Temperature Sensing (DTS) interrogators; can also be fusion spliced to similar hydrogen insensitive core optical fiber, and traditional lead-in optical fibers

Low friction, crush and elongation resistant outer coating resists chemicals and abrasion and is easy to mechanically strip

### Product Description

This optical fiber is designed for distributed temperature sensing and communications in applications where hydrogen diffusion is a concern, and in temperatures up to 160 °C for long durations. The waveguide features a proprietary, hydrogen insensitive core structure to minimize the effects of hydrogen darkening, and also features a dual-layer coating system. The inner layer of enhanced chemical and abrasion resistance, low thermal expansion, and is a zero halogen material providing low smoke and toxicity. This combination is suitable for long-term use up to 160 °C. In addition, this fiber structure is ideal for low temperature and cryogenic applications, operating indefinitely at low temperatures (~up to 20 years, performance and reliability will vary depending on installation environment. Consult OFS for guidance).

Visit our website at [www.ofsoptics.com](http://www.ofsoptics.com)

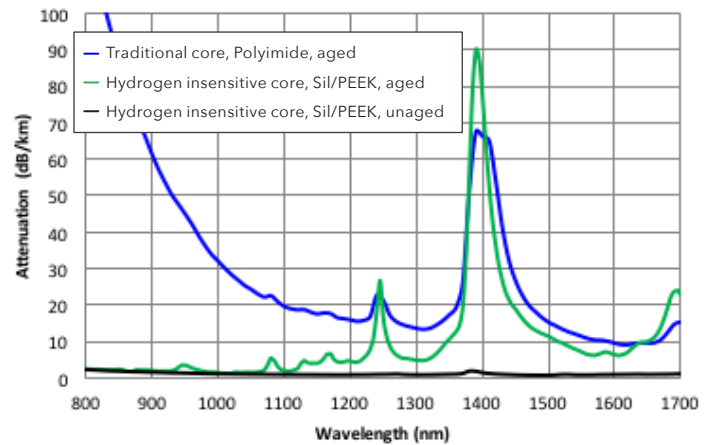
## Hydrogen Insensitive Core GI MM 50 Optical Fiber (Silicone/PEEK Coating)

### Specifications

Item Number	<b>F80398</b>	
Description	GEO50-H Geophysical Graded-Index Optical Fiber - Hydrogen Resistant, Silicone/PEEK	
Type	Multimode Graded-Index	
Numerical Aperture	0.20	
Attenuation	@ 850 nm	≤ 4.0 dB/km
	@ 1300 nm	≤ 2.0 dB/km
Bandwidth	OFL @ 850 nm	≥ 400 Mhz-km
	OFL @ 1300 nm	≥ 400 Mhz-km
Core Diameter	50 ± 3 μm	
Clad Diameter	125 ± 1 μm	
Cladding Non-Circularity	≤ 2.0%	
Hermetic Carbon Layer	None	
Primary Coating Diameter	450 ± 30 μm	
Secondary Coating Diameter	700 ± 50 μm	
Operating Temperature	-55 to +200 °C	
Short Term Excursions (24 Hours)	Up to 410 °C	
Coating Material	Silicone/PEEK	
Short-Term Bend Radius (Mechanical)	≥ 8 mm	
Long-Term Bend Radius (Mechanical)	≥ 10 mm	
Proof Test Level	200 kpsi (1.38 Gpa)	
* NOTE: Hydrogen diffusion performance curve on right		

## Proprietary, Hydrogen Insensitive Core Optical Fibers - Lower Sensitivity to H<sub>2</sub>

Aging Condition: 5% H<sub>2</sub>/95% N<sub>2</sub>, 1500 psi, 200 °C, 10 days



### Hydrogen Ingression Performance

Hydrogen Concentration	Partial Pressure (PSI)	Temperature (°C)	Duration (Days)	H <sub>2</sub> Induced Loss @ 1060 nm
5%	1,500	200	10	< 1.0 dB/km

For additional information please contact your sales representative.

You can also visit our website at [www.ofsoptics.com](http://www.ofsoptics.com) or call 1-888-fiberhelp (1-888-342-3743) USA or 1-770-798-5555 outside the USA.

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