

WHY ZYLON® PBO?

Key Features

- Excellent strength & modulus properties
- Good flame resistance
- Excellent thermal stability
- Excellent resistance to creep
- Good chemical resistance

Disadvantages

- Very poor UV resistance
- Poor compressive strength
- Strength loss in exposure to strong acids

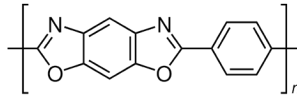
FIBER-LINE® PROCESS FOR ZYLON® PBO

- Coating
- Twisting
- Extrusion
- Pultrusion
- Precision Winding

FIBER-LINE® ZYLON® PRODUCTS

- Strength Members

Molecular Structure



Chemical Name

P-phenylene-2,6-benzobisoxazole (PBO).

Manufacturer

Toyobo™.

History

PBO was first developed in the 1980's and is the world's strongest man-made fiber. It is also the first organic fiber whose cross-sectional strength outperforms both steel and carbon fiber.

Composition

Zylon® PBO is a rigid-rod isotropic crystal polymer that is spun by a dry-jet wet spinning process.

Common Deniers

250, 500, 1000, 1500.

Types

AS- Standard.

HM- High Modulus.



POLYBENZYLOATE (PBO) BARE FIBER PERFORMANCE

Abrasion Resistance	Yarn on Yarn Abrasion	Ultraviolet (UV) Resistance	Flame Resistance	Chemical Resistance (Acid)	Chemical Resistance (Alkali)	Chemical Resistance (Organic Solvent)
O	X	X	✓	O	O	✓

CHEMICAL COMPATIBILITY

Chemical Resistance to Acid: Strength loss in HCl, HNO₃, H₂SO₄ & NaCl.

Chemical Resistance to Alkali: Strong alkalis will attack at high temperature or concentration.

Chemical Resistance to Organic Solvent: Strength loss in NaOCl.

POLYBENZYLOATE (PBO) DATA

Standard Modulus

Property	UOM	Value
Breaking Tenacity	g/d	42.0
Specific Gravity	Ratio	1.54
Elongation @ Break	%	3.5
Tensile Modulus	g/d	1200
Moisture Regain*	%	2.0
Creep**	%	0
Shrinkage***	%	<1.0
Melt Point	°C	N/A
Decomposition Temp.	°C	TBD

High Modulus

Property	UOM	Value
Breaking Tenacity	g/d	42.0
Specific Gravity	Ratio	1.56
Elongation @ Break	%	2.5
Tensile Modulus	g/d	1800
Moisture Regain*	%	0.6
Creep**	%	0
Shrinkage***	%	<1.0
Melt Point	°C	N/A
Decomposition Temp.	°C	TBD

* Equilibrium moisture regain @ 55% RH ** Creep @ 40%-58% ultimate tensile strength *** Shrinkage in dry air @ 177 C for 30 minutes

This data is provided for informational purposes only, and does not constitute a specification. FIBER-LINE® makes no warranty, express or implied, that the product conforms to these values. Contact your FIBER-LINE® representative for exact product details which conform to your specific requirements.

ABOUT FIBER-LINE®

For over 25 years, FIBER-LINE® has provided science-driven expertise that improves the performance and the end-use processing of high performance fibers. Our products enable the search for new energy reserves and extend the life of fiber optic telecommunication cables. They also add important characteristics, such as SWELLCOAT® water-blocking, water repellence, adhesion, color, and wear and UV-resistance to these and many other applications. We believe that our ongoing commitment to protect the environment, to remain at the forefront of fiber and coating technology, and to 'treat others as we want to be treated' will continue to drive the success of our customers, shareholders, and employees.



LOCATIONS

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