



PEEK

Tubing

Optinova's PEEK tubing is an engineering thermoplastic with outstanding chemical resistance, low absorption rate and great dimensional stability.

PEEK has excellent heat tolerance and can withstand high temperatures and still maintain its stiffness. Thanks to this robustness, PEEK is ideal for applications in challenging environments.

In a medical setting, PEEK can be used as an alternative to metals in various applications as it is biocompatible and bone-friendly thanks to its optimal modulus.

At Optinova, we can extrude PEEK into different shapes and forms such as multi-lumen, monofilament, and ultra-thin wall. Post-extrusion secondary operations and fabrications are also available for your unique product applications, including flanging, flaring, tapering, etc.

Key features

- High temperature resistance and burst pressure
- Strong yet highly flexible and pure
- Low moisture uptake and resistant to gamma rays
- Mechanically strong with high torque and wear even at high temperatures
- Alternative to steel and other materials due to lighter weight and no corrosion

Applications

- Tubing for HPLC columns
- Cable insulation for fiberoptics
- Insulation for wires in cables for aerospace or EV applications
- Monofilaments for 3D printing
- Cardiovascular delivery systems
- Orthopedic implants and devices
- Dental applications
- Trauma fixation

Sizes and values

Optinova produces PEEK tubing in a size range of ID 0.10 mm (0.004 inch) up to OD 4.00 mm (0.157 inch), both in natural color (beige-brown) as well as other standard colors. Striped and dual layer PEEK tubing is available upon request and can be tailored to your drawing & specification. Standard tolerances are ± 0.05 mm/ ± 0.0020 inch on ID and OD. Custom tolerances are possible upon request. Below are example sizes, other sizes are available upon request.

Color	ID mm/inch	Wall mm/inch	OD mm/inch	Min. bending radius ISO 106191 B	Tensile strength ISO 527	Max elongation at F max	Working pressure bar/psi
Natural	0.10 / 0.004"	0.744 / 0.029"	1.588 / 1/16"	< 50 mm / 1,97"	>95 MPa	250%	450/6527
Black	0.10 / 0.004"	0.744 / 0.029"	1.588 / 1/16"	< 50 mm / 1,97"	>95 MPa	250%	450/6527
Natural	0.13 / 0.005"	0.729 / 0.029"	1.588 / 1/16"	< 50 mm / 1,97"	>101 MPa	290%	450/6527
Red	0.13 / 0.005"	0.729 / 0.029"	1.588 / 1/16"	< 50 mm / 1,97"	>101 MPa	290%	450/6527
Natural	0.15 / 0.006"	0.719 / 0.028"	1.588 / 1/16"	< 50 mm / 1,97"	>109 MPa	379%	430/6237
Violet	0.15 / 0.006"	0.719 / 0.028"	1.588 / 1/16"	< 50 mm / 1,97"	>109 MPa	379%	430/6237
Natural	0.18 / 0.007"	0.704 / 0.028"	1.588 / 1/16"	< 50 mm / 1,97"	>103 MPa	375%	430/6237
Yellow	0.18 / 0.007"	0.704 / 0.028"	1.588 / 1/16"	< 50 mm / 1,97"	>103 MPa	375%	430/6237
Natural	0.25 / 0.010"	0.669 / 0.026"	1.588 / 1/16"	< 50 mm / 1,97"	>101 MPa	375%	410/5947
Blue	0.25 / 0.010"	0.669 / 0.026"	1.588 / 1/16"	< 50 mm / 1,97"	>101 MPa	375%	410/5947
Natural	0.50 / 0.020"	0.544 / 0.021"	1.588 / 1/16"	< 50 mm / 1,97"	>102 MPa	277%	330/4785
Orange	0.50 / 0.020"	0.544 / 0.021"	1.588 / 1/16"	< 50 mm / 1,97"	>102 MPa	277%	330/4786
Natural	0.75 / 0.030"	0.419 / 0.016"	1.588 / 1/16"	< 50 mm / 1,97"	>118 MPa	340%	250/3626
Green	0.75 / 0.030"	0.419 / 0.016"	1.588 / 1/16"	< 50 mm / 1,97"	>118 MPa	340%	250/3626
Natural	1.00 / 0.039"	0.294 / 0.012"	1.588 / 1/16"	< 50 mm / 1,97"	>115 MPa	231%	170/2466
Grey	1.00 / 0.039"	0.294 / 0.012"	1.588 / 1/16"	< 50 mm / 1,97"	>115 MPa	231%	170/2466
Natural	1.59 / 0.063"	0.805 / 0.032"	3.180 / 1/8"	< 50 mm / 1,97"	>103 MPa	23%	225/3263
Natural	2.00 / 0.079"	0.590 / 0.023"	3.180 / 1/8"	< 50 mm / 1,97"	>101 MPa	20%	170/2466

Note: Test values are for submitted samples only. Test at RI.SE Research Institute of Sweden in 2022.

PEEK tubing is supplied in coils, on spools or in cut-to-length pieces. Standard raw material used for production is Victrex® PEEK 381G. Special material grade(s) or tubing design can be offered upon submission of drawing and/or specification. Minimum order quantity/size applies. Other sizes and tolerances are available upon request if technically feasible. Prototyping cost may apply.

Material properties

Property	Specification	Unit	PEEK
General			
Continuous service temp	Maximum	°C	250
Chemical resistance			Good
Density (crystalline)	ISO 1183	g/m ³	1.3
Electrical			
Dielectric constant at 23°C, 50 Hz	IEC 60250		3.2
Dielectric constant at 200°C, 50 Hz			4.5
Dielectric strength, 2 mm thickness	IEC 60243-1	kV/mm	23
Dielectric strength, 50 µm thickness		kV/mm	190
Volume resistivity at 23°C	IEC 60093	Ohm • cm	1016
Volume resistivity at 125°C			1015
Volume resistivity at 175°C			109
Environmental			
Water absorption, saturation at 23°C	ISO 62	%	0.45
Water absorption, saturation at 100°C			0.55
Mechanical			
Tensile strength, yield 23°C	ISO 527	Mpa	98
Tensile elongation, break 23°C	ISO 527	%	45
Compressive strength at 23°C	ISO 604	Mpa	125
Compressive strength at 120°C			70
Flexural modulus at 23°C	ISO 178	Gpa	3.8
Tensile modulus at 23°C	ISO 527	Gpa	4
Hardness Shore D at 23°C	ISO 868		84
Thermal			
Melting point	ISO 11357	°C	340
Glass transition (T _g)	ISO 11357	°C	143
Thermal conductivity at 23°C	ISO 22007-4	W/mK	0.29
Heat deflection, molded 1.8 MPa	ISO 75-f	°C	152
Heat deflection, annealed 200°C/4h			160

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