

PEEK natural - Stock Shapes (rods, plates, tubes)

POLYETHER ETHER KETONE engineering plastic extruded stock shapes available in **PEEK NAT** is part of high performance engineering plastic products offered under trade name **POLYMAT** for machining into industrial components. These products are made using the best raw material in modern production facility under strict quality confirming to international standards.

PEEK is amenable to standard metal working machine tools and can be fabricated with ease to yield smooth surface finish. It is semi crystalline thermoplastic with high tensile strength, stiffness, good wear resistance, low coefficient of friction, excellent chemical resistance and very low moisture absorption.

Information on technical properties for designers is provided below. More specific data and engineering assistance is available upon request.

Chemical Designation PEEK (Polyetheretherketone)

Color beige opaque Density 1.31 g/cm

Main features

- Good heat deflection temperature
- Good machinability
- Inherent flame retardant
- Resistance against high energy radiation
- Good slide and wear properties
- Very good chemical resistance
- High creep resistance
- Hydrolysis and superheated Steam resistant

Target Industries

- Chemical technology
- Mechanical engineering
- Food technology
- Electronics
- Energy industry
- Oil and gas industry
- Aircraft and aerospace technology
- Automotive industry
- Semiconductor technology

• Mechanical properties	Parameter	Value	Unit	Norm
Tensile modulus	23 °C	400	MPa	ISO 527-1
Tensile Stress	yield,23°C	98	MPa	ISO 527-2
Tensile strain	Break,23°C	0	ISO 527-2	ISO 527-2
Flexural Modulus	23°C	3800	MPa	ISO 178
Flexural Stress	23°C ³	165	MPa	
	3.5% Strain,23°C	125	MPa	
	125°C	85	MPa	
	175°C	19	MPa	
	275°C	12	MPa	
Compressive Stress	23°C	125	MPa	ISO 604
	120°C	70	MPa	
• Thermal properties	Parameter	Value	Unit	Norm
Deflection Temperature Under Load	1.8 MPa, Unannealed	152	°C	ISO 75-2/Af
Glass Transition Temperature	On point	143	°C	ISO 11357-2
	Midpoint	150	°C	
Melting Temperature		343	°C	ISO 11357-3
Thermal expansion (CLTE)	Flow:<143°C	45	ppm/k	ISO 11359-2
	Flow:>143°C	120		
			ppm/k	
	Transverse:<143°C	55		
			ppm/k	
Thermal conductivity	23 °C ⁴	0.3		
	23°C ⁵	0.27	W/(K*m)	ISO 22007-4:2008
RTI Elec		260	°C	UL 746B
RTI Imp		180	°C	UL 746B
RTI Str		240	°C	UL 746B
• Electrical properties	Parameter	Value	Unit	Norm
Volume resistivity	23°C	1.OE+16	Ω*cm	IEC 60093
	125°C	1.OE+15	Ω*cm	
	275°C	1.OE+9	Ω*cm	
Dielectric Strength	0.0500 mm	200	kV/mm	IEC 60250
	2.00 mm	23	kV/mm	
Dielectric Constant	23°C,50Hz	3		IEC 60250
	23°C,1kHz	3.1		
	23°C,50Hz	4.5		
Dissipation Factor	23°C,1 MHz	4.00E-03		IEC 60250
Comparative Tracking Index		150	V	IEC 60112

• Hardness	Parameter	Value	Unit	Norm
Shore Hardness	Shore D,23°C	84.5		ISO 868
• Hardness	Parameter	Value	Unit	Norm
Charpy Notched Impact Strength	23°C	7	kJ/m ³	ISO 179/1eA
Charpy Unnotched Impact Strength	23°C	No Break		ISO 179/1U
Notched Izod Impact Strength	23°C	8	kJ/m ³	ISO 180/A
Unnotched Izod Impact Strength	23°C	No Break		ISO 180/1U

- PEEK products may be based on Victrex® PEEK.