



PEEK®

Characteristics

- * Excellent Chemical Resistance
- * Very Low Moisture Absorption
- * Inherently Low Moisture Absorption
- * Unaffected by Continuous Exposure to Hot Water or Steam
- * Exceptional High Strength Properties and Wear Resistance

Description

PEEK (polyetheretherketone), is a high temperature crystalline thermoplastic which offers excellent thermal and chemical resistance properties and superior resistance to wear and dynamic fatigue. PEEK is ideally suited for applications requiring good chemical resistance at elevated temperatures.

Ketron PEEK grades offer chemical and hydrolysis resistance similar to PPS, but can operate at higher temperatures. Peek 1000 offers steam and wear resistance, while carbon-reinforced PEEK provides excellent wear capabilities. Our latest grade, PEEK HPV offers outstanding bearing performance. PEEK can be used continuously to 480° F (250° C) and in hot water or steam without permanent loss in physical properties. For hostile environments, PEEK is a high strength alternative to fluoropolymers. PEEK carries a V-0 flammability rating and exhibits very low smoke and toxic gas emission when exposed to fire.

Forms Available

ROD .125 to 6.00 " diameter, Lengths to 12 feet
 BUSHING 1.97" - 10" OD, 1.18" - 8" ID
 PLATE .250" to 4.000" thick, Widths to 24", Lengths to 48"
 COLOR White or Black

Typical Property Values

MECHANICAL @ 73F

		PEEK 1000	30% Glass Filled	30% Carbon Filled	HPV Peek
Specific Gravity		1.31	1.51	1.41	1.44
Tensile Strength	psi	16,000	14,000	19,000	11,000
Tensile Modulus of Elasticity	psi	630,000	1,000,000	1,100,000	850,000
Tensile Elongation (at Break)	%	40	2	5	2
Flexural Strength	psi	25,000	23,000	25,750	27,500
Flexural Modulus of Elasticity	psi	600,000	1,000,000	1,250,000	1,100,000
Shear Strength	psi	8,000	14,000		10,000
Compressive Strength, 10% Deformation	psi	20,000	22,000	29,000	26,700
Compressive Modulus of Elasticity	psi	500,000	550,000		1,000,000
Rockwell Hardness	M Scale	100	103	102	85
Izod Impact Strength, Notched	ft-lbs/in. of notch	1.00	0.80	1.03	0.70
Coefficient of Friction, Dynamic (Dry vs. Steel)		0.40		0.20	0.210
Limiting PV (4 :1 Safety Factor Applied)	ft.lbs/in. ² min	8,500		25,000	20,000
Wear Factor	in ³ -min/ft.lbs. hr.	375		150	100
Water Absorption 24 hrs	% by wt.	0.10	0.10	0.06	0.05

THERMAL

Coefficient of Linear Expansion (-40°F to 300°F)	in./in./°F	2.6 x 10 ⁻⁵	1.2 x 10 ⁻⁵	1 x 10 ⁻⁵	1.7 x 10 ⁻⁵
Heat Deflection Temperature @264 psi	°F	320	450	518	383
Melting Point (Crystalline)	°F	644	644	644	644
Continuous Service Temperature in Air	°F	480	480	482	482
Thermal Conductivity	°F	1.75	2.98	6.40	1.70

ELECTRICAL

Dielectric Strength, Short Term	Volts/mil	480	500	32	
Surface Resistivity	Ohms/Sq.	>10 ¹³	>10 ¹³	>10 ⁵	>10 ⁴
Dielectric Constant	1 MHz	3.3			
Dissipation Factor	1 MHz	0.003			

(Properties listed above are provided for reference only, they should not be used for design specifications or quality control , Peek is a registered Trademark of Victrex Corp.)