

Material Properties

Virgin PEEK

Material code: 5001

Its high mechanical properties at elevated temperatures, combined with excellent chemical and hydrolysis resistance, make it the most popular advanced thermoplastic material available today. The use of unreinforced PEEK material is increasingly growing across all industries for metal replacements and other applications. Now, with its FDA approval, PEEK material can also be used to fabricate components in food and beverage as well as medical and pharmaceutical processing equipment.

Physical Properties	ASTM Method	Typical Values
Specific Gravity	D792	1.32 gr/cm ³
Water Absorption (24 hrs. @ 74°F)	D570	0.15 %
Color	N/A	Tan
Mechanical Properties		
Tensile Strength	D1708	14,300 psi
Elongation	D1708	
• At Break		15%
Flexural Strength	D790	22,000 psi
Flexural Modulus	D790	500,000 psi
Compressive Strength	D695	17,000 psi
Compressive Modulus	D695	440,000 psi
Impact Strength (Izod, notched)	D256	1 ft-lb/in
Hardness	Shore D	87
Tribological Properties		
Coefficient of friction	D3702	
• Static		0.55
• Dynamic		0.50
Wear rate (PV: 20,000 psi-fpm)	D3702	4.6 uin/min
Thermal Properties		
Coefficient of Linear Thermal Expansion (78-400°F)	D696	25 10 ⁻⁶ °F
Heat Deflection Temperature (F/C @ 264 psi)	D648	300°F
Glass Transition Temperature (T _g)	D3418	289°F
Melting Point		644°F
Continuous Service Temperature (Max @ no load)		480°F
Electrical Properties		
Volume Resistivity (ohm-cm) @ 50% RH	D257	10 ¹⁶ ohm-cm
Dielectric Strength	D149	1285 KV/mm
Dielectric Constant	D150	3.3 Hz, 200°F

Note: Property values should be interpreted as typical rather than minimum value. All technical information and recommendations are presented in good faith, and based upon laboratory and real-world tests believe to be reliable and practical. However, K.C. Seals, Inc. cannot guarantee the accuracy or completeness of this information, and it is the customers' responsibility to determine product suitability to any given application.

