

Material Properties

Bearing Grade PEEK

Material code: 5025

It is reinforced with carbon fibers and internally lubricated with different proprietary lubricants to improve dry running capabilities. Tribological evaluations under dry running conditions have shown its friction coefficient and wear rate to be much lower than other bearing grade composite materials available in the market. It's extremely low wear rate along with low coefficient of thermal expansion properties make this material an ideal candidate for replacing metal wear components.

This material is especially suited to centrifugal pump components such as impeller/case wear rings, throat bushings, and line shaft bearings. In addition to improved reliability and increased MTBR (mean time between repair), these features allow for 50% tighter clearance gaps than API recommended values, thereby increasing pump efficiency resulting in substantial savings.

Physical Properties	ASTM Method	Typical Values
Specific Gravity	D792	1.42 gr/cm 3
Water Absorption (24 hrs. @ 74°F)	D570	0.15 %
Color	N/A	Black
Mechanical Properties		
Tensile Strength	D1708	18,900 psi
Elongation	D1708	
• At Break		3.5%
Flexural Strength	D790	25,000 psi
Flexural Modulus	D790	1,200,000 psi
Compressive Strength	D695	25,000 psi
Compressive Modulus	D695	540,000 psi
Impact Strength (Izod, notched)	D256	1.4 ft-lb/in
Hardness	Shore D	88
Tribological Properties		
Coefficient of friction	D3702	
• Static		0.12
• Dynamic		0.08
Wear rate (PV: 20,000 psi-fpm)	D3702	1.34 uin/min
Thermal Properties		
Coefficient of Linear Thermal Expansion (78-400°F)	D696	11 10 ⁻⁶ °F
Heat Deflection Temperature (F/C @ 264 psi)	D648	600°F
Glass Transition Temperature (T _g)	D3418	289°F
Melting Point		644°F
Continuous Service Temperature (Max @ no load)		500°F
Electrical Properties		
Volume Resistivity (ohm-cm) @ 50% RH	D257	10 ¹⁴ ohm-cm
Dielectric Strength	D149	KV/mm
Dielectric Constant	D150	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.



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