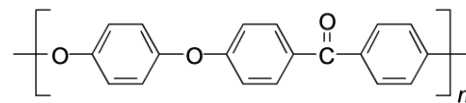


## Polyetheretherketone (Bearing Grade PEEK)

### SPECIFICATIONS

Property	Spec	Value
Specific Gravity	ASTM D 792	1.44 g/cc
Water Absorption, Immersion@24hr	ASTM D570(2)	0.05%
Water Absorption @ Saturation, Immersion	ASTM D570(2)	0.30%
Hardness, Rockwell M	ASTM D785	85
Tensile Strength, Ultimate	ASTM D638	75.8 MPa
Elongation @ Break	ASTM D638	2%
Tensile Modulus	ASTM D638	5.86 GPa
Flexural Modulus	ASTM D790	7.58 GPa
Flexural Yield Strength	ASTM D790	190 MPa
Compressive Strength, 10% def.	ASTM D695	184 MPa
Compressive Modulus	ASTM D695	6.89 GPa
Shear Strength	ASTM D732	68.9 MPa
Coefficient of Friction, Dry vs. Steel	QTM55007	0.21
K (wear) Factor	QTM 55010	201 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M
Limiting Pressure Velocity, 4:1 safety factor	QTM 55007	0.701 MPa-m/sec
Izod Impact, Notched , Type A	ASTM D256	0.374 J/cm
CTE, linear 68° (-40°F to 300°F)	ASTM E831	30.6 µm/m-°C
Thermal Conductivity	ASTM F433	0.245 W/m-K
Melting Point, Crystalline, Peak	ASTM D3418	340°C
Max Service Temp, Air, Long Term, Deflection Temp @ 1.8MPa (264psi)	ASTM D648	250°C 195°C



### DESCRIPTION

MK04 is a PEEK material with hardness 85M, specially compounded for bearing grade applications. Polyetheretherketone (PEEK) belongs to ketone polymer family. It has a highly conjugated molecular structure with aromatic, ketone and ether linkages. The double ether linkages in PEEK make it more flexible and capable of crystallizing than other members in the ketone polymer family. This chemical structure provides PEEK with exceptional physical and chemical stability at very high temperatures and in aggressive chemical environments. PEEK has much greater mechanical properties and dimensional integrity at high temperatures than other polymers thus it is regarded as the most advanced high performance polymer in demanding applications. Due to the nature of crystallinity of PEEK, its properties can be affected by process temperature controls. Fillers improve PEEK's performance. Glass or carbon fiber can increase the mechanical properties and dimensional stability of PEEK. PTFE, graphite or carbon powder can reduce friction or increase wear life. PEEK articles can be molded by injection or compression process. PEEK is relatively new and it was commercialized only in the late 1970s.