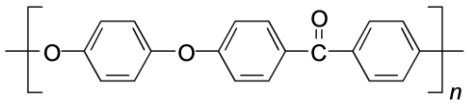
systemseals

MATERIAL SPECIFICATION SHEET

MK09

Polyetheretherketone
(PEEK with carbon filler and lubricant)



SPECIFICATIONS

Property	Spec	Value
Density [g/cc]	ASTM D792-00	1.44
Tensile Strength [psi]	ASTM D638	10,500
Elongation [%]	ASTM D638	1.60
Hardness [Shore D]	ASTM D2240	85/88
Flexural Strength @ 73°F [psi]	ASTM D790	13,773
Flexural Modulus of Elasticity @ 73° F [psi]	ASTM D790	676,824
Compressive Strength [psi]	ASTM D695	22,397
Compressive Modulus [psi]	ASTM D695	388,522
Coefficient of Thermal Expansion, (TMA) stress relieved, 25-250° C [µm/(m-°C)] Measured parallel to the molding direction Measured perpendicular to the molding direction	ASTM E831-03	 163.33 105.60
Dielectric Strength [V/mil]	ASTM D149	No Data Available
Volume of Resistivity [Ω cm]	ASTM D257	No Data Available

The data shown should not be used for specification and the ranges of data listed are not intended to establish limiting property values. While the lower values represent the minimum properties recommended, the higher values often are attainable only by special fabrication techniques. Since the property values of compounded materials may vary considerably with method of fabrication, specifications must be arranged by mutual agreement between purchaser and fabricator.

DESCRIPTION

MK09 is a PEEK material with hardness 85-88D, specially compounded carbon fiber filled PEEK with additional PTFE lubricant. 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 crystalizing 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.