



CM HPV PEEK Polyetheretherketone; PTFE, Graphite, and Carbon Fiber Filled Bearing Grade, compression molded (ASTM Data)

Categories: Polymer; Thermoplastic; Polyketone; Polyetheretherketone (PEEK); Polyetheretherketone, PEEK, Carbon Fiber Filled

Physical Properties	Metric	English	Comments
Specific Gravity	1.44 g/cc	1.44 g/cc	ASTM D792
Water Absorption	0.070 %	0.070 %	Immersion, 24hr; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Tensile Strength	54.5 MPa	7900 psi	ASTM D638
Elongation at Break	2.0 %	2.0 %	ASTM D638
Tensile Modulus	3.65 GPa	530 ksi	ASTM D638
Flexural Yield Strength	89.6 MPa	13000 psi	ASTM D790
Flexural Modulus	4.83 GPa	700 ksi	ASTM D790
Compressive Yield Strength	138 MPa	20000 psi	10% Def.; ASTM D695
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256 Type A
Limiting Pressure Velocity	1.23 MPa-m/sec	35000 psi-ft/min	4:1 safety factor; QTM 55007

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	<= 100000 ohm	<= 100000 ohm	EOS/ESD S11.11

Thermal Properties	Metric	English	Comments
CTE, linear	48.6 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature -40.0 - 149 $^{\circ}\text{C}$	27.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature -40.0 - 300 $^{\circ}\text{F}$	ASTM E831
Melting Point	340 $^{\circ}\text{C}$	644 $^{\circ}\text{F}$	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	249 $^{\circ}\text{C}$	480 $^{\circ}\text{F}$	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	249 $^{\circ}\text{C}$	480 $^{\circ}\text{F}$	ASTM D648
Flammability, UL94	V-0	V-0	1/8 inch (Estimated Rating)

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Limited	Limited	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Acceptable	Acceptable	
Conductive / Static Dissipative	Yes	Yes	
Continuous Sunlight	Acceptable	Acceptable	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

Descriptive Properties			
Color		Natural	
Machinability		7	1-10, 1=Easier to Machine