



## KETRON® PEEK

- Excellent chemical resistance
- Very low moisture absorption
- Inherently good wear and abrasion resistance
- Unaffected by continuous exposure to hot water or steam

### Ketron® PEEK 1000 - Polyetheretherketone, unfilled, extruded

This general purpose grade is unreinforced and offers the highest elongation and toughness of all PEEK grades. The newly available black PEEK 1000 is ideal for instrument components where aesthetics are important, as well as for seal components where ductility and inertness are important

### Ketron® PEEK GF 30 - 30% glass reinforced, extruded

The addition of glass fibers significantly reduces the expansion rate and increases the flexural modulus of PEEK. This grade is ideal for structural applications that require improved strength, stiffness or stability, especially at temperatures above 300°F (150°C).

### Ketron® PEEK CF (CM) - 30% carbon fiber reinforced, compression molded

The addition of carbon fibers enhances the compressive strength and stiffness of PEEK, and dramatically lowers its expansion rate. It offers designers optimum wear resistance and load carrying capability in a PEEK-based product. This grade provides 312 times higher thermal conductivity than unreinforced PEEK—dissipating heat from the bearing surface faster.

### Ketron PEEK (CM) - Polyetheretherketone, unfilled, compression molded

Ketron PEEK grades offer chemical and hydrolysis resistance similar to PPS, but can operate at higher temperatures. Unreinforced, compression molded Ketron PEEK offers good wear resistance. It can be used continuously to 480°F (250°C) and in hot water or steam without permanent loss in physical properties. For hostile environments, PEEK is a high strength alternative to fluoropolymers. PEEK carries a V-O flammability rating and exhibits very low smoke and toxic gas emission when exposed to flame.

### Ketron PEEK 30% GF (CM)

Polyetheretherketone, 30% glass reinforced, compression molded

Compression molded 30% Glass fiber reinforced polyetheretherketone. The addition of glass fibers significantly reduces the expansion rate and increases the flexural modulus of PEEK. This grade is ideal for structural applications that require improved strength, stiffness or stability, especially at temperatures above 300°F.

### Ketron® PEEK HPV - (Bearing Grade)

Carbon fiber reinforced with graphite and PTFE lubricants, our newest grade of Peek offers the lowest coefficient of friction and the best machinability for all PEEK grades. An excellent combination of low friction, low wear, high LPV, Low mating part wear and w easy machining, make it ideal for aggressive service bearings

Extruded	Rod	Disc	Plate	Tubular Bar	Other
Ketron® PEEK	.125" - 4.0"	-	.250" - 2.0" (A)	Quote Upon Request	-
30% Glass Ketron® PEEK	.375" - 2.0"	-	-	Quote Upon Request	-
Ketron® PEEK HPV	.236" - 3.94"	-	.197" - 1.97" (G)	1.97"-7.88" O.D. , 1.18"-6.30" ID	-
Compression Molded	Rod	Disc	Plate	Tubular Bar	Other
Ketron® PEEK	1.0" to 1.25"	-	-	1.625"-12.50" O.D. , .750"-11.0" ID	-
30% Glass Ketron® PEEK	1.0" to 1.625"	-	-	1.625"-12.50" O.D. , .750"-11.0" ID	-
30% Carbon-Ketron® PEEK	1.0" to 3.75"	3.5" -10.125" dia		1.50"- 32.0" O.D. , .750"-24.0" ID	-

Key: A= 24" Wide x 48" Long      G= 24" Wide x 39" Long



		PEEK 1000 Extruded	PEEK-30%GF Glass Reinforced Extruded	PEEK-30%CF Carbon Fiber Compression Molded
<b>MECHANICAL PROPERTIES</b>	<b>ASTM</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
Specific Gravity	D792	1.31	1.51	1.42
Tensile Strength, psi	D638	16,000	18,000	20,000
Tensile Modulus, psi	D638	500,000	900,000	800,000
Elongation, %	D638	20	3	2
Flexural Strength, psi	D790	25,000	28,000	30,000
Flexural Modulus, psi	D790	600,000	100,000	130,000
Shear Strength, psi	D732	8,000	14,000	-
Compressive Strength, psi	D695, 10% Def.	20,000	26,000	25,000
Compressive Modulus, psi	D695	500,000	100,000	550,000
Hardness, Rockwell M	D785	100	103	97
Hardness, Rockwell R	D785	126	126	125
Izod Impact (Notched), ft-lb/in	D256 Type A	1	1.4	0.4
Coefficient of Friction, Dynamic	Dry vs. Steel,	0.4	-	0.24
Limiting PV, psi-fpm	PTM55010	3,000	3750	15,000
k (wear) factor, 10-10in3-min/lb-ft-hr	PTM55010	235	150	160
<b>THERMAL PROPERTIES</b>				
Coefficient of Thermal Expansion,	E831 (TMA)	0.26	0.12	0.17
Deflection Temperature 264 psi, °F	D648	320	450	450
Melting Point (Crystalline) Peak, °F	D3418	644	644	644
Continuous Service in Air (Max), °F	Without Load	480	480	480
Thermal Conductivity, BTU-in/hr-ft <sup>2</sup> -°F		1.75	2.98	6.37
<b>ELECTRICAL PROPERTIES</b>				
Dielectric Strength, Volts/mil	D149(2)	480	500	10,000
Volume Resistivity, Ohm-cm	D257	1E+15	1E+15	-
Dielectric Constant, 1 MHz	ASTM D150(2)	3.3	-	-
Dissipation Factor, 1 MHz	ASTM D150(2)	0.003	-	-
<b>CHEMICAL PROPERTIES</b>				
Water Absorption Immersion, %	24 hr	0.1	0.1	0.15
Water Absorption, %	Saturation	0.5	0.3	0.5
Acids, Weak (acetic, dilute HCl)		3	3	3
Acids, Strong (conc. HCl or sulfuric)		2	2	2
Alkalies, Weak (dilute NaOH)		2	3	3
Alkalies, Strong (conc. NaOH)		1	3	3
Hydrocarbons, Aromatic (toluene)		3	3	3
Hydrocarbons, Aliphatic (gasoline)		3	3	3
Ketones, Esters (acetone)		3	3	3
Ethers (diethyl ether, THF)		3	3	3
Chlorinated Solvents (methylene chloride)		3	3	3
Alcohols (methanol, anti-freeze)		3	3	3
Inorganic Salt Solutions (NaCl, KCl)		3	3	3
Continuous Sunlight		2	2	3
Steam		3	3	3
1= Unacceptable, 2= Limited Service, 3= Acceptable Service				
<b>COMPLIANCE</b>				
Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB)	V-O UL94	5 (VO)	5 (VO)	5 (VO)
FDA (1=Yes)		0 Compliant	0 Compliant	0 Compliant
USDA (1=Yes)		0 Compliant	0 Compliant	0 Compliant
NSF (1=Yes)		0 Compliant	0 Compliant	0 Compliant
3A-Dairy (1=Yes)		0 Compliant	0 Compliant	0 Compliant
Canada AG (1=Yes)		0 Compliant	0 Compliant	0 Compliant
USP Class VI (1=Yes)		1 Not Compliant	0 Compliant	1 Not Compliant



		PEEK-CM Unfilled Compression Molded	PEEK-30% GF Glass Reinforced Compression Molded	PEEK-HPV Bearing Grade Extruded
<b>MECHANICAL PROPERTIES</b>	<b>ASTM</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
Specific Gravity	D792	1.32	1.51	1.45
Tensile Strength, psi	D638	15,000	17,000	9,000
Tensile Modulus, psi	D638	450,000	750,000	850,000
Elongation, %	D638	10	3	2
Flexural Strength, psi	D790	25,000	28,000	27,500
Flexural Modulus, psi	D790	600,000	100,000	110,000
Shear Strength, psi	D732	-	-	-
Compressive Strength, psi	D695, 10% Def.	17,000	19,000	27,700
Compressive Modulus, psi	D695	450,000	500,000	100,000
Hardness, Rockwell M	D785	99	103	85
Hardness, Rockwell R	D785	126	124	-
Izod Impact (Notched), ft-lb/in	D256 Type A	1	1.4	1
Coefficient of Friction, Dynamic	Dry vs. Steel,	0.4	-	0.21
Limiting PV, psi-fpm	PTM55010	3,000	3750	10,000
k (wear) factor, 10-10in3-min/lb-ft-hr	PTM55010	250	160	-
<b>THERMAL PROPERTIES</b>				
Coefficient of Thermal Expansion,	E831 (TMA)	0.26	0.14	0.17
Deflection Temperature 264 psi, °F	D648	320	600	383
Melting Point (Crystalline) Peak, °F	D3418	644	644	644
Continuous Service in Air (Max), °F	Without Load	480	480	480
Thermal Conductivity, BTU-in/hr-ft <sup>2</sup> -°F		1.75	2.98	1.6
<b>ELECTRICAL PROPERTIES</b>				
Dielectric Strength, Volts/mil	D149(2)	480	500	10,000
Volume Resistivity, Ohm-cm	D257	1E+15	1E+15	-
Dielectric Constant, 1 MHz	ASTM D150(2)	3.3	-	-
Dissipation Factor, 1 MHz	ASTM D150(2)	0.003	-	-
<b>CHEMICAL PROPERTIES</b>				
Water Absorption Immersion, %	24 hr	0.15	0.15	0.05
Water Absorption, %	Saturation	0.5	0.3	0.3
Acids, Weak (acetic, dilute HCl)		3	3	-
Acids, Strong (conc. HCl or sulfuric)		2	2	-
Alkalies, Weak (dilute NaOH)		3	3	-
Alkalies, Strong (conc. NaOH)		3	3	-
Hydrocarbons, Aromatic (toluene)		3	3	-
Hydrocarbons, Aliphatic (gasoline)		3	3	-
Ketones, Esters (acetone)		3	3	-
Ethers (diethyl ether, THF)		3	3	-
Chlorinated Solvents (methylene chloride)		3	3	-
Alcohols (methanol, anti-freeze)		3	3	-
Inorganic Salt Solutions (NaCl, KCl)		3	3	-
Continuous Sunlight		2	3	-
Steam		3	3	-
1= Unacceptable, 2= Limited Service, 3= Acceptable Service				
<b>COMPLIANCE</b>				
Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB) V-O UL94		5 (VO)	5 (VO)	5 (VO)
FDA(1=Yes)		0 Compliant	0 Compliant	
USDA(1=Yes)		0 Compliant	0 Compliant	
NSF (1=Yes)		0 Compliant	0 Compliant	
3A-Dairy (1=Yes)		0 Compliant	0 Compliant	
Canada AG (1=Yes)		0 Compliant	0 Compliant	
USP Class VI (1=Yes)		1 Not Compliant	0 Compliant	