Pyramid™ PEKK KD4219

Polyetherketoneketone

Polymics, Ltd.

Message:

Pyramid® KD4219 is a highly wear resistant, semi-crystalline thermoplastic compound that offers an outstanding combination of strength, toughness, chemical resistance and superior dimensional stability. Comprised of Polyetherketoneketone (PEKK) base resin reinforced with carbon fibers and proprietary lubricants, Pyramid® KD4219 is an ideal choice for sliding and rotational wear components used in environments with temperatures of up to 500°F.
Benefits offered by Pyramid® KD4219:
Outstanding Wear Resistance
Limiting PV of 32,000
500°F Heat Deflection Temperature Rating @ 264 psi
Extremely High Strength and Stiffness
Excellent Dimensional Stability
Very Good Resistance to Chemicals and Steam
Low Moisture Absorption
Flammability Rated UL V-0
Easy to Machine into complex configurations
Pyramid® KD4219 is offered by Polymics in both resin pellets for injection molding or extrusion and near net shapes for machining. Resin pellets are packaged in boxes or gaylords. To meet the wide ranging needs of machinists and fabricators, Pyramid® KD4219 stock shapes are offered by Polymics in a wide array of both compression molded and injection molded shapes and sizes. Polymics' offerings include plates in sizes from 10"x10" to 12"x18" and thicknesses from 1/4" all the way to 2", rods in diameters from ¼" to 5" in lengths up to 18" long and tubular bars and discs with outer diameters up to 15". Injection molded shapes are available from existing tools in a wide variety of shapes and sizes.

General Information	
Filler / Reinforcement	Carbon Fiber
Additive	Lubricant
Features	Flame Retardant Good Chemical Resistance Good Dimensional Stability Good Toughness Good Wear Resistance High Stiffness High Strength Low Moisture Absorption Machinable Semi Crystalline
Uses	Machinery Maintenance/Repair
Appearance	Black
Forms	Pellets Preformed Parts
Processing Method	Compression Molding Extrusion Injection Molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.46	g/cm³	ASTM D792
Water Absorption (24 hr)	0.040	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	90		ASTM D785
Durometer Hardness (Shore D)	84		ASTM D2240
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	12400	MPa	ASTM D638
Tensile Strength (Break)	172	MPa	ASTM D638
Tensile Elongation (Break)	2.0	%	ASTM D638
Flexural Modulus	12400	MPa	ASTM D790
Flexural Strength (Yield)	248	MPa	ASTM D790
Compressive Strength	221	MPa	ASTM D695
Shear Strength	138	MPa	ASTM D732
Coefficient of Friction			ASTM D1894
vs. Steel - Dynamic	0.17		
vs. Steel - Static	0.11		
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (3.18 mm)	53	J/m	ASTM D256
Unnotched Izod Impact (3.18 mm)	640	J/m	ASTM D256
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	260	°C	ASTM D648
Glass Transition Temperature	160	°C	DSC
Melting Temperature	360	°C	DSC
CLTE - Flow (-40 to 149°C)	4.5E-5	cm/cm/°C	TMA
Thermal Conductivity	0.25	W/m/K	ASTM C177
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	< 1.0E+8	ohms	ASTM D257
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (3.18 mm)	V-0		UL 94
Additional Information	**Nominal Value**	**Unit**	
Limiting Pressure Velocity [1]	142000	J/m	
NOTE			
1.	4:1 safety factorp		

Recommended distributors for this material

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