

Ketron™ SP CA30 PEEK



Poly-ether-ether-ketone

Ketron™ SP CA30 PEEK is a 30% carbon fiber-reinforced grade that combines high stiffness, mechanical strength and creep resistance, with optimum wear resistance. This grade provides more thermal conductivity than unreinforced PEEK, increasing heat dissipation from bearing surfaces and improving bearing life and pressure velocity capabilities.

		ISO*			ASTM*		
		Test methods	Units	Indicative values	Test methods	Units	Indicative values
Thermal properties (1)	Melting temperature (DSC, 10°C (50°F) / min)	ISO 11357-1/-3	°C	340	ASTM D3418	°F	
	Glass transition temperature (DMA- Tan δ) (2)		°C			°F	
	Thermal conductivity at 23°C (73°F)		W/(K.m)	0.92		BTU in./hr.ft² .°F)	
	Coefficient of linear thermal expansion (-40 to 150 °C) (-40 to 300°F)				ASTM E-831 (TMA)	µin./in./°F	
	Coefficient of linear thermal expansion (23 to 100°C) (73°F to 210°F)		µm/(m.K)	25			
	Coefficient of linear thermal expansion (23 to 150°C) (73°F to 300°F)		µm/(m.K)	25			
	Coefficient of linear thermal expansion (>150°C) (> 300°F)		µm/(m.K)	55			
	Heat Deflection Temperature: method A: 1.8 MPa (264 PSI)	ISO 75-1/-2	°C	160	ASTM D648	°F	
	Continuous allowable service temperature in air (20.000 hrs) (3)		°C	250		°F	
	Min. service temperature (4)		°C	-20		°F	
Mechanical Properties (6)	Flammability: UL 94 (3 mm (1/8 in.)) (5)			V-0			V-0
	Flammability: Oxygen Index	ISO 4589-1/-2	%				
	Tensile strength	ISO 527-1/-2 (7)	MPa	135	ASTM D638 (8)	PSI	
	Tensile strain (elongation) at yield	ISO 527-1/-2 (7)	%		ASTM D638 (8)	%	
	Tensile strain (elongation) at break	ISO 527-1/-2 (7)	%	1.5	ASTM D638 (8)	%	
	Tensile modulus of elasticity	ISO 527-1/-2 (9)	MPa	11,000	ASTM D638 (8)	KSI	
	Shear Strength	ASTM D732	MPa		ASTM D732	PSI	
	Compressive stress at 1 / 2 / 5 % nominal strain	ISO 604 (10)	MPa	80 / 150 / 200			
	Compressive strength				ASTM D695 (11)	PSI	
	Charpy impact strength - unnotched	ISO 179-1/1eU	kJ/m²	25			
	Charpy impact strength - notched	ISO 179-1/1eA	kJ/m²	4			
	Izod Impact notched				ASTM D256	ft.lb./in	
	Flexural strength	ISO 178 (12)	MPa	220	ASTM D790 (13)	PSI	
Electrical Properties	Flexural modulus of elasticity	ISO 178 (12)	MPa		ASTM D790	KSI	
	Rockwell M hardness (14)	ISO 2039-2		102	ASTM D785		
	Rockwell R hardness (14)	ISO 2039-2			ASTM D785		
	Electric strength	IEC 60243-1 (15)	kV/mm		ASTM D149	Volts/mil	
	Volume resistivity	IEC 62631-3-1	Ohm.cm		ASTM D257	Ohm.cm	
Miscellaneous	Surface resistivity	ANSI/ESD STM 11.11	Ohm	10⁴-10⁶	ANSI/ESD STM 11.11	Ohm	
	Dielectric constant at 1 MHz	IEC 62631-2-1			ASTM D150		
	Dissipation factor at 1MHz	IEC 62631-2-1			ASTM D150		
	Color			Black			Black
	Density	ISO 1183-1	g/cm³	1.41			
	Specific Gravity				ASTM D792		
	Water absorption after 24h immersion in water of 23 °C (73°F)	ISO 62 (16)	%	0.05	ASTM D570 (17)	%	
	Water absorption at saturation in water of 23 °C (73°F)		%	0.35	ASTM D570 (17)	%	
	Wear rate	ISO 7148-2 (18)	µm/km		QTM 55010 (19)	in³.min/ft.lbs.hrX10 ⁻¹⁰	
	Dynamic Coefficient of Friction (-)	ISO 7148-2 (18)		-	QTM 55007 (20)		
	Limiting PV at 100 FPM (safety factor 4)				QTM 55007 (21)	ft.lbs/in².min	
	Limiting PV at 0.1 / 1 m/s cylindrical sleeve bearings		MPa.m/s				
	Limiting PV at 0.5 m/s cylindrical sleeve bearings	QTM 55007 (21)	MPa.m/s				
	Chemical Resistance						

Note: 1 g/cm³ = 1,000 kg/m³ ; 1 MPa = 1 N/mm² ; 1 kV/mm = 1 MV/m

NYP: there is no yield point