

Ketron™ LSG CA30 PEEK



Poly-ether-ether-ketone

Ketron™ LSG CA30 PEEK (Life Science Grade) stock shapes are made from 30% carbon fiber-reinforced PEEK resin, pre-assessed for biocompatibility. The stock shape is also pre-assessed for biocompatibility for up to 24 hours contact with body and tissue according to USP VI and ISO 10993.

Ketron™ LSG CA30 PEEK shapes exhibit exceptional stiffness, mechanical strength and dimensional stability, as well as optimal resistance to wear and creep. The components are also sterilizable by means of steam (autoclave), dry heat, EtO (ethylene oxide), plasma and gamma- and X-ray irradiation. These attributes make this material an excellent candidate for applications in the medical and bioprocessing fields, such as nailing target devices, grips, adapters and washers.

		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	644
	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	6.4
	Coefficient of linear thermal expansion (-40 to 150 °C) (-40 to 300°F)				ASTM E-831 (TMA)	µin./in./°F	10
	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	260	ASTM D648	°F	518
	Continuous allowable service temperature in air (20.000 hrs) (3)		°C	250		°F	482
	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	%	40			
	Tensile strength	ISO 527-1/-2 (7)	MPa	110	ASTM D638 (8)	PSI	17,000
	Tensile strain (elongation) at yield	ISO 527-1/-2 (7)	%		ASTM D638 (8)	%	
	Tensile strain (elongation) at break	ISO 527-1/-2 (7)	%	6.4	ASTM D638 (8)	%	6
	Tensile modulus of elasticity	ISO 527-1/-2 (9)	MPa	6,200	ASTM D638 (8)	KSI	1,100
	Shear Strength	ASTM D732	MPa	103	ASTM D732	PSI	15,000
	Compressive stress at 1 / 2 / 5 % nominal strain	ISO 604 (10)	MPa	69 / 125 / 170			
	Compressive strength				ASTM D695 (11)	PSI	29,000
	Charpy impact strength - unnotched	ISO 179-1/1eU	kJ/m²	50			
	Charpy impact strength - notched	ISO 179-1/1eA	kJ/m²	5.0			
	Izod Impact notched				ASTM D256	ft.lb./in	1.03
	Flexural strength	ISO 178 (12)	MPa	220	ASTM D790 (13)	PSI	25,750
Electrical Properties	Flexural modulus of elasticity	ISO 178 (12)	MPa		ASTM D790	KSI	1,250
	Rockwell M hardness (14)	ISO 2039-2		102	ASTM D785		102
	Rockwell R hardness (14)	ISO 2039-2			ASTM D785		
	Electric strength	IEC 60243-1 (15)	kV/mm		ASTM D149	Volts/mil	32
	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	10⁴-10⁶
	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	1.4			
	Specific Gravity				ASTM D792		1.41
	Water absorption after 24h immersion in water of 23 °C (73°F)	ISO 62 (16)	%		ASTM D570 (17)	%	0.06
	Water absorption at saturation in water of 23 °C (73°F)		%	0.35	ASTM D570 (17)	%	0.3
	Wear rate	ISO 7148-2 (18)	µm/km	2	QTM 55010 (19)	in³.min/ft.lbs.hrX10-¹⁰	150
	Dynamic Coefficient of Friction (-)	ISO 7148-2 (18)		0.2-0.3	QTM 55007 (20)		0.2
	Limiting PV at 100 FPM (safety factor 4)				QTM 55007 (21)	ft.lbs/in².min	25,000
	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