

Quadrant EPP Ketron® LSG PEEK-CLASSIX Biocompatibility tested (ASTM Product Data Sheet)

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK) , Polyetheretherketone, PEEK, Unreinforced

Material Notes:

KETRON® PEEK-CLASSIX LSG white stock shapes are produced from Invibio® PEEK-CLASSIX White resin. This material exhibits a unique combination of mechanical properties, temperature and chemical resistance. The composition of the Invibio PEEK-CLASSIX White resin complies with the regulations that apply in the Member States of the European Union (Directive 2002/72/EC, as amended) and in the United States of America (FDA) for plastic materials and articles intended to come into contact with foodstuffs. KETRON PEEK-CLASSIX LSG stock shapes have also been successfully type tested for their compliance with both United States Pharmacopeia (USP) and ISO 10993-1 guideline requirements for Biocompatibility Testing of Materials, and they come with full traceability from resin to stock shape. These features, added to an excellent sterilizability by means of steam, dry heat, ethylene oxide, plasma and gamma irradiation, make KETRON PEEK-CLASSIX LSG stock shapes very suitable for applications in the medical, pharmaceutical and biotechnology markets. Excellent chemical resistance Very low moisture absorption Inherently good wear and abrasion resistance Unaffected by continuous exposure to hot water or steam

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http://www.lookpolymers.com/polymer_Quadrant-EPP-Ketron-LSG-PEEK-CLASSIX-Biocompatibility-tested-ASTM-Product-Data-Sheet.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.31 g/cc	1.31 g/cc	ASTM D792
Water Absorption	0.050 %	0.050 %	Immersion, 24hr; ISO 62
	0.11 %	0.11 %	Immersion, 96hr; ISO 62
Moisture Absorption at Equilibrium	0.20 %	0.20 %	23°C/50% R.H.
Water Absorption at Saturation	0.45 %	0.45 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	105	105	ISO 2039-2
Ball Indentation Hardness	190 MPa	27600 psi	ISO 2039-1
Tensile Strength	114.97 MPa	16675 psi	ASTM D638
Tensile Strength, Yield	115 MPa	16700 psi	ISO 527
Elongation at Break	14 %	14 %	ISO 527
Elongation at Yield	4.5 %	4.5 %	ISO 527
Tensile Modulus	4.34 GPa	630 ksi	ASTM D638
Flexural Strength	172 MPa	25000 psi	ASTM D790

Compressive Strength Mechanical Properties	40.0 MPa Metric	5800 psi English	10% Def.; ASTM D695 Comments
	79.01 MPa	11460 psi	2% Def.; ISO 604
	142.96 MPa	20735 psi	5% Def.; ISO 604
Izod Impact, Notched	0.320 J/cm	0.600 ft-lb/in	ASTM D256
Charpy Impact Unnotched	40.0 J/cm ²	190 ft-lb/in ²	ISO 179-1/1eU
Charpy Impact, Notched	0.350 J/cm ²	1.67 ft-lb/in ²	ISO 179-1/1eA
K (wear) Factor	755 x 10 ⁻⁸ mm ³ /N-M	375 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.298 MPa-m/sec	8500 psi-ft/min	4:1 safety factor; QTM 55007

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 µm/m-°C	27.8 µin/in-°F	ASTM E831
	@Temperature 23.0 - 100 °C	@Temperature 73.4 - 212 °F	
	55.1 µm/m-°C	30.6 µin/in-°F	ASTM E831
	@Temperature 23.0 - 150 °C	@Temperature 73.4 - 302 °F	
Thermal Conductivity	130 µm/m-°C	72.2 µin/in-°F	ASTM E831
	@Temperature >= 150 °C	@Temperature >= 302 °F	
Melting Point	340 °C	644 °F	ISO 11357
Maximum Service Temperature, Air	250 °C	482 °F	Long Term
	310 °C	590 °F	Short Periods
Deflection Temperature at 1.8 MPa (264 psi)	165 °C	329 °F	ISO 75
Minimum Service Temperature, Air	-50.0 °C	-58.0 °F	
Flammability, UL94	V-0	V-0	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-0	V-0	
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	35 %	35 %	ISO 4589

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	IEC 60093
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	IEC 60093

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	Yes	Yes	

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	No	No	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

Descriptive Properties	Value	Comments
Color	Natural	

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