

Quadrant EPP Ketron® 1000 PEEK unfilled, extruded (ISO Data)

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

Material Notes:

Ketron PEEK-1000 stock shapes are produced from virgin polyetheretherketone resin and offer the highest toughness and impact strength of all Ketron PEEK grades. Both Ketron PEEK-1000 natural & black can be sterilised by all conventional sterilisation methods (steam, dry heat, ethylene oxide and gamma irradiation). Very high maximum allowable service temperature in air (250 °C continuously, up to 310 °C for short periods of time) High mechanical strength, stiffness and creep resistance, also at elevated temperatures Excellent chemical and hydrolysis resistance Excellent wear & frictional behaviour Very good dimensional stability Excellent resistance to high energy radiation (gamma- and X-rays) Inherent low flammability and very low levels of smoke evolution during combustion

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Ketron-1000-PEEK-unfilled-extruded-ISO-Data.php

Physical Properties	Metric	English	Comments
Density	1.31 g/cc	0.0473 lb/in ³	ISO 1183-1
Moisture Absorption at Equilibrium	0.20 %	0.20 %	50% RH
Water Absorption at Saturation	0.45 %	0.45 %	
Outgassing - Total Mass Loss	0.26 %	0.26 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	105	105	ISO 2039-2
Hardness, Shore D	85	85	
Ball Indentation Hardness	210 MPa	30500 psi	ISO 2039-1
Tensile Strength	115 MPa	16700 psi	at Yield; ISO 527-1/-2
Elongation at Break	17 %	17 %	ISO 527-1/-2
Elongation at Yield	5.0 %	5.0 %	ISO 527-1/-2
Tensile Modulus	4.30 GPa	624 ksi	ISO 527-1/-2
Flexural Strength	170 MPa	24700 psi	
Compressive Strength	38.0 MPa	5510 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	75.0 MPa	10900 psi	ISO 604
	@Strain 2 %	@Strain 2 %	
	140 MPa	20300 psi	ISO 604

Mechanical Properties	@Strain 5 % Metric	@Strain 5 % English	Comments
K Factor (ISO)	28 µm/km	28 µm/km	
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	0.350 J/cm ²	1.67 ft-lb/in ²	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.30 - 0.50	0.30 - 0.50	
Limiting Pressure Velocity	0.210 MPa-m/sec	6000 psi-ft/min	at 1 m/s unlubricated
	0.330 MPa-m/sec	9420 psi-ft/min	at 0.1 m/s unlubricated

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 µm/m-°C	27.8 µin/in-°F	
	@Temperature 23.0 - 100 °C	@Temperature 73.4 - 212 °F	
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ft ² -°F	
Melting Point	340 °C	644 °F	DSC, 10°C/min.; ISO 11357-1/-3
Maximum Service Temperature, Air	250 °C	482 °F	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	160 °C	320 °F	ISO 75-1/-2
Flammability, UL94	V-0	V-0	
Oxygen Index	35 %	35 %	ISO 4589-1/-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.0e+14 ohm-cm	>= 1.0e+14 ohm-cm	IEC 60093
Surface Resistivity per Square	>= 1.0e+13 ohm	>= 1.0e+13 ohm	IEC 60093
Dielectric Constant	3.2	3.2	IEC 60250
	@Frequency >=100000 Hz	@Frequency >=100000 Hz	
Dielectric Strength	24.0 kV/mm	610 kV/in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 100000 Hz	@Frequency 100000 Hz	
Comparative Tracking Index	150 V	150 V	IEC 60112

Compliance Properties	Metric	English	Comments
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3A-Dairy Compliance Properties	Yes Metric	Yes English	Only natural Comments
European Food 1935/2004	Yes	Yes	natural and black
FDA	Yes	Yes	natural and black
USP Class VI	No	No	

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	
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	

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