

Solvay Specialty Polymers KetaSpire® KT-820 GF30 Polyetheretherketone (PEEK), 30% Glass Fiber

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK) , Polyetheretherketone, PEEK, Glass Fiber Filled

Material Notes:

KetaSpire® KT-820 GF30 is a medium flow, 30% glass fiber reinforced grade of polyetheretherketone (PEEK). This resin offers higher strength and stiffness properties relative to unreinforced KetaSpire® PEEK resin. Reinforcement also affords greater mechanical robustness in structural applications, particularly those with service temperatures approaching 300°C. Features: Autoclave Sterilizable; E-beam Sterilizable; Ethylene Oxide Sterilizable; Fatigue Resistant; Flame Retardant; Good Chemical Resistance; Good Dimensional Stability; Good Sterilizability; Heat Sterilizable; High Heat Resistance; High Stiffness; High Strength; Radiation (Gamma) Resistant; Radiation Sterilizable; Radiotranslucent; Steam Resistant; Steam Sterilizable. Uses: Aircraft Applications; Connectors; Dental Applications; Electrical/Electronic Applications; Film; Hospital Goods; Industrial Applications; Medical Devices; Medical/Healthcare Applications; Oil/Gas Applications; Seals; Surgical Instruments. Information provided by Solvay Specialty Polymers.

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http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-KetaSpire-KT-820-GF30-Polyetheretherketone-PEEK-30-Glass-Fiber.php

Physical Properties	Metric	English	Comments
Density	1.53 g/cc	0.0553 lb/in ³	ASTM D792
Filler Content	30 %	30 %	Glass Fiber
Water Absorption	0.10 % @Time 86400 sec	0.10 % @Time 24.0 hour	ISO 62
Viscosity	850000 cP @Shear Rate 1000 1/s, Temperature 400 °C	850000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt Viscosity; ASTM D3835
Linear Mold Shrinkage, Flow	0.0020 - 0.0040 cm/cm @Thickness 3.18 mm	0.0020 - 0.0040 in/in @Thickness 0.125 in	
Linear Mold Shrinkage, Transverse	0.014 - 0.016 cm/cm @Thickness 3.18 mm	0.014 - 0.016 in/in @Thickness 0.125 in	ASTM D955
Melt Flow	0.70 g/10 min @Load 2.16 kg, Temperature 400 °C	0.70 g/10 min @Load 4.76 lb, Temperature 752 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	100	100	ASTM D785
Hardness, Shore D	91	91	1 sec; ASTM D2240

Tensile Strength Mechanical Properties	158 MPa Metric	22900 psi English	ASTM D638 Comments
Tensile Strength, Yield	158 MPa	22900 psi	5 mm/min; ASTM D638
	165 MPa	23900 psi	5 mm/min, Type 1A; ISO 527-2
Elongation at Break	2.7 %	2.7 %	Nominal; 5 mm/min, Type 1A; ISO 527-2
Tensile Modulus	10.5 GPa	1520 ksi	5 mm/min; ASTM D638
	11.4 GPa	1650 ksi	ISO 527-2
Flexural Strength	246 MPa	35700 psi	ISO 178
	271 MPa	39300 psi	ASTM D790
Flexural Yield Strength	261 MPa	37900 psi	ASTM D790
Flexural Modulus	10.3 GPa	1490 ksi	ASTM D790
	10.7 GPa	1550 ksi	ISO 178
Compressive Strength	169 MPa	24500 psi	ASTM D695
Poissons Ratio	0.34	0.34	ASTM E132
Shear Strength	93.1 MPa	13500 psi	ASTM D732
Izod Impact, Notched	1.10 J/cm	2.06 ft-lb/in	ASTM D256
Izod Impact, Unnotched	9.60 J/cm	18.0 ft-lb/in	ASTM D256
Izod Impact, Notched (ISO)	13.0 kJ/m ²	6.19 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	56.0 kJ/m ²	26.6 ft-lb/in ²	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	17.0 Åµm/m-Å°C @Temperature -50.0 - 50.0 Å°C	9.44 Åµin/in-Å°F @Temperature -58.0 - 122 Å°F	1
Specific Heat Capacity	1.30 J/g-Å°C @Temperature 50.0 Å°C	0.311 BTU/lb-Å°F @Temperature 122 Å°F	ASTM C351
	1.73 J/g-Å°C @Temperature 200 Å°C	0.413 BTU/lb-Å°F @Temperature 392 Å°F	ASTM C351
Thermal Conductivity	0.290 W/m-K	2.01 BTU-in/hr-ftÅ²-Å°F	ASTM C177
Melting Point	340 Å°C	644 Å°F	ASTM D3418

Thermal Properties	Metric	English	Comments
Deflection Temperature at 1.8 MPa (264 psi)	315 Â°C	599 Â°F	Annealed, ASTM D648
Glass Transition Temp, Tg	150 Â°C	302 Â°F	DSC
Flammability, UL94	V-0 @Thickness >=1.60 mm	V-0 @Thickness >=0.0630 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.90e+17 ohm-cm	1.90e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.41	3.41	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.44	3.44	
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	ASTM D150
	3.44	3.44	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	17.0 kV/mm @Thickness 3.00 mm	432 kV/in @Thickness 0.118 in	ASTM D149
Dissipation Factor	0.0010 @Frequency 60.0 Hz	0.0010 @Frequency 60.0 Hz	ASTM D150
	0.0010 @Frequency 1000 Hz	0.0010 @Frequency 1000 Hz	ASTM D150
	0.0030 @Frequency 1.00e+6 Hz	0.0030 @Frequency 1.00e+6 Hz	ASTM D150

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	365 Â°C	689 Â°F	
Middle Barrel Temperature	370 Â°C	698 Â°F	
Front Barrel Temperature	375 Â°C	707 Â°F	
Nozzle Temperature	380 Â°C	716 Â°F	
Mold Temperature	175 - 205 Â°C	347 - 401 Â°F	

Processing Properties	Metric	English	Comments
Drying Temperature	@Time 14400 sec	@Time 4.00 hour	

Descriptive Properties	Value	Comments
Agency Ratings	FAA FAR 25.853a; ISO 10993; ISO 10993-Part 1	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Beige	
Form	Pellets; Powder	
Injection Rate	Fast	
Processing Technique	Injection Molding; Machining; Profile Extrusion	
RoHS Compliance	RoHS Compliant	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

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