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KetaSpire[®] KT-820 GF30 polyetheretherketone

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.

KetaSpire® PEEK is produced to the highest industry standards and is characterized by a distinct combination of

best-in-class fatigue resistance, ease of melt processing, high purity, and excellent chemical resistance to organics, acids, and bases.

These properties make it well-suited for applications in healthcare, transportation, electronics, chemical processing, and other industrial uses.

Beige: KetaSpire® KT-820 GF30 BG20

Material Status	 Commercial: Active 			
Availability	 Africa & Middle East Asia Pacific	EuropeLatin America	North America	
Filler / Reinforcement	Glass Fiber, 30% Filler by Weight			
Features	 Autoclave Sterilizable E-beam Sterilizable Ethylene Oxide Sterilizab 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 	FilmHospital GoodsIndustrial ApplicationsMedical Devices	 Medical/Healthcare Applications Oil/Gas Applications Seals Surgical Instruments 	
Agency Ratings	• FAA FAR 25.853a ¹	• ISO 10993		
RoHS Compliance	 RoHS Compliant 			
Appearance	• Beige			
Forms	Pellets	Powder		
Processing Method	 Injection Molding 	Machining	 Profile Extrusion 	

Physical	Typical Value Unit	Test method
Specific Gravity	1.53	ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	0.70 g/10 min	ASTM D1238
Molding Shrinkage ²		ASTM D955
Flow : 3.18 mm	0.20 to 0.40 %	
Across Flow : 3.18 mm	1.4 to 1.6 %	
Water Absorption (24 hr)	0.10 %	ASTM D570
Mechanical	Typical Value Unit	Test method
Tensile Modulus		
3	10500 MPa	ASTM D638
	11400 MPa	ISO 527-2/1A/1

KetaSpire® KT-820 GF30 polyetheretherketone

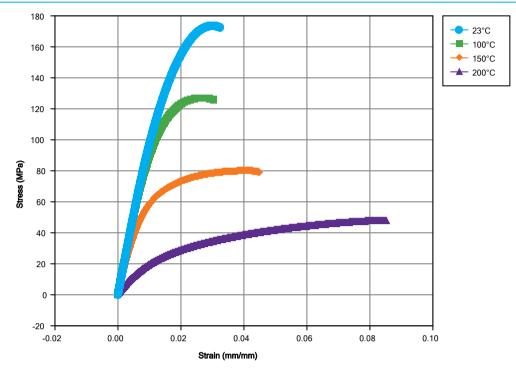
Tensile Strength 153 MPa ASTM De38 Yield 165 MPa ISO 527-2/1A/5 I				
Yield ³ 168 MPa ASTM D638 Yield 168 MPa ISO 527-2/1A5 158 MPa ASTM D638 Nominal Tensle Strain at Break 2.7 % ISO 527-2/1A5 2.7 % ASTM D638 Rexural Modulus 2.7 % ASTM D638 10300 MPa ASTM D790 10300 MPa ASTM D790 10300 MPa ASTM D790 261 MPa ISO 178 Fexural Strength 261 MPa ASTM D790 261 MPa ASTM D790 Compressive Strength 169 MPa ASTM D790 Compressive Strength <t< td=""><td>Mechanical</td><td>Typical Value</td><td>Unit</td><td>Test method</td></t<>	Mechanical	Typical Value	Unit	Test method
Yield 165 MPa ISO 527-2/1A/5 158 MPa ASTM D638 Nominal Tensile Strain at Break 2.7 % ISO 527-2/1A/5 2.7 % ASTM D638 Plexural Modulus 2.7 % ASTM D638 10300 MPa ASTM D790 10300 MPa ISO 178 Plexural Strength 10700 MPa ISO 178 271 MPa ASTM D790 271 MPa ASTM D790 246 MPa ISO 178 Yield 261 MPa ASTM D790 Compressive Strength 169 MPa ASTM D790 Compressive Strength 199 MPa ASTM D790 Compressive Strength 199 MPa ASTM D790 Compressive Strength 199 MPa ASTM D790 Vield 0.34 ASTM D790 Compressive Strength 103 J/ma ASTM D790 Impact Typical Value Unit Test method Notched Izod Impact - 110 J/m ASTM D256 110 J/m ASTM D261 - 100 J/m ASTM D261 - 960 J/m ASTM D4812 - 100 J/m ASTM D264 <td>-</td> <td>1.50</td> <td></td> <td></td>	-	1.50		
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4 2.7 % ASTM D638 Flexural Modulus	Nominal Tensile Strain at Break	0.7	0/	
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Yield 261 MPa ASTM D790 Compressive Strength 169 MPa ASTM D695 Shear Strength 93.1 MPa ASTM D732 Poisson's Ratio 0.34 ASTM D732 Poisson's Ratio 0.34 ASTM E132 Impact Typical Value Unit Test method Notched Izod Impact				
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Poisson's Ratio 0.34 ASTM E132 Impact Typical Value Unit Test method Notched Izod Impact 110 J/m ASTM D256 110 J/m ASTM D256 13 kJ/m² ISO 180 Unnotched Izod Impact 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 960 J/m ASTM D4812 910 ASTM D7240 Packwell Hardness (M-Scale) 100 ASTM D2240 Thermal Typical Value Unit Test method Deflection Temperature Under Load 1315 °C 1.8 MPa, Annealed 315 °C Glass Transition Temperature 150 °C ASTM D4818 Deflection 50°C) 1.7E-5 cm/cm/°C ASTM E331 <td< td=""><td></td><td></td><td></td><td></td></td<>				
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Notched Izod Impact Image: model and	Impact	Typical Value	Unit	Test method
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Unnotched Izod Impact 960 J/m ASTM D4812 56 kJ/m ² ISO 180 Hardness Typical Value Unit Test method Rockwell Hardness (M-Scale) 100 ASTM D785 Durometer Hardness (Shore D, 1 sec) 91 ASTM D2240 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 1.8 MPa, Annealed 315 °C Glass Transition Temperature 150 °C ASTM D3418 Peak Melting Temperature 340 °C ASTM D3418 CLTE - Flow (-50 to 50°C) 1.7E-5 cm/cm/°C ASTM D3418 Specific Heat DSC 50°C 1300 J/kg/°C Thermal Conductivity 0.29 W/m/K ASTM E1530 Electrical Typical Value Unit Test method Surface Resistivity > 1.9E+17 ohms ASTM D257 Volume Resistivity 1.9E+17 ohms ASTM D257		110	J/m	ASTM D256
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56 kJ/m²ISO 180HardnessTypical ValueUnitTest methodRockwell Hardness (M-Scale)100ASTM D785Durometer Hardness (Shore D, 1 sec)91ASTM D2240ThermalTypical ValueUnitTest methodDeflection Temperature Under Load315 °CGlass Transition Temperature150 °CGlass Transition Temperature150 °CASTM D3418Peak Melting Temperature340 °CASTM D3418CLTE - Flow (-50 to 50°C)1.7E-5 cm/cm/°CASTM E831Specific HeatDSC50°C200°C200°C1730J/kg/°CThermal Conductivity0.29W/m/KASTM E1530ElectricalTypical ValueUnitTest methodSurface Resistivity> 1.9E+17 ohmsASTM D257Volume Resistivity1.9E+17 ohms-cmASTM D257	Unnotched Izod Impact			
HardnessTypical ValueUnitTest methodRockwell Hardness (M-Scale)100ASTM D785Durometer Hardness (Shore D, 1 sec)91ASTM D2240ThermalTypical ValueUnitTest methodDeflection Temperature Under Load315 °CGlass Transition Temperature150 °C1.8 MPa, Annealed315 °CGlass Transition Temperature150 °CASTM D3418Peak Melting Temperature340 °CASTM D3418CLTE - Flow (-50 to 50°C)1.7E-5 cm/cm/°CASTM E831Specific HeatDSC50°C200°C50°C1300 J/kg/°CDSC200°C1730 J/kg/°CThermal Conductivity0.29 W/m/KElectricalTypical ValueUnitTest methodSurface Resistivity> 1.9E+17 ohmsASTM D257Volume Resistivity1.9E+17 ohms·cmASTM D257		960	J/m	ASTM D4812
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	-			
Dielectric Strength (3.00 mm)17 kV/mmASTM D149	Volume Resistivity			
	Dielectric Strength (3.00 mm)	17	kV/mm	ASTM D149

KetaSpire® KT-820 GF30 polyetheretherketone

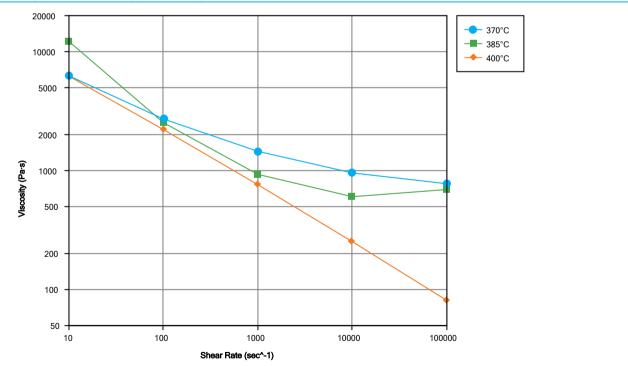
Electrical	Typical Value Unit	Test method
Dielectric Constant		ASTM D150
60 Hz	3.44	
1 kHz	3.44	
1 MHz	3.41	
Dissipation Factor		ASTM D150
60 Hz	1.0E-3	
1 kHz	1.0E-3	
1 MHz	3.0E-3	
Flammability	Typical Value Unit	Test method
Flame Rating		UL 94
1.60 mm	V-0	
20.3 mm	V-0	
Fill Analysis	Typical Value Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	850 Pa·s	ASTM D3835
Injection	Typical Value Unit	
Drying Temperature	150 °C	
Drying Time	4.0 hr	
Rear Temperature	365 °C	
Middle Temperature	370 °C	
Front Temperature	375 °C	
Nozzle Temperature	380 °C	
Mold Temperature	175 to 205 °C	
Injection Rate	Fast	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

polyetheretherketone

Isothermal Stress vs. Strain (ISO 11403-1)



Viscosity vs. Shear Rate (ISO 11403-2)



KetaSpire® KT-820 GF30

polyetheretherketone

Notes

Typical properties: these are not to be construed as specifications.

¹ Passes 60s VB flame, smoke & toxicity requirements.

² 5" x 0.5" x 0.125"

³ 5.0 mm/min

⁴ Type 1A, 5 mm/min

www.solvay.com

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