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
Black: KetaSpire KT-820 GF30 BK95

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight	
Features	• Autoclave Sterilizable • Chemical Resistant • E-beam Sterilizable • Ethylene Oxide Sterilizable • Fatigue Resistant • Flame Retardant • 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
Agency Ratings	• ASTM D8033 PEEK012GF30 • FAA FAR 25.853a [1]	• ISO 10993 • MIL P-46183 Type II Class 3
RoHS Compliance	• RoHS Compliant	
Appearance	• Beige	• Black
Forms	• Pellets	• Powder
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / 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 527-1/1A/1
Tensile Strength			
Yield [3]	158	MPa	ASTM D638
Yield	165	MPa	ISO 527-2/1A/5
--	158	MPa	ASTM D638
Nominal Tensile Strain at Break			
--	3.1	%	ISO 527-2/1A/5
-- [4]	3.1	%	ASTM D638
Flexural Modulus			
--	10300	MPa	ASTM D790
--	10700	MPa	ISO 178
Flexural Strength			
--	271	MPa	ASTM D790
--	246	MPa	ISO 178
Yield	261	MPa	ASTM D790
Compressive Strength	169	MPa	ASTM D695
Shear Strength	93.1	MPa	ASTM D732
Poisson's Ratio	0.34		ASTM E132

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	110	J/m	ASTM D256
--	13	kJ/m²	ISO 180
Unnotched Izod Impact			
--	960	J/m	ASTM D4812
--	56	kJ/m²	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 E831
Specific Heat			DSC
50°C	1300	J/kg/°C	
200°C	1730	J/kg/°C	
Thermal Conductivity	0.29	W/m/K	ASTM E1530

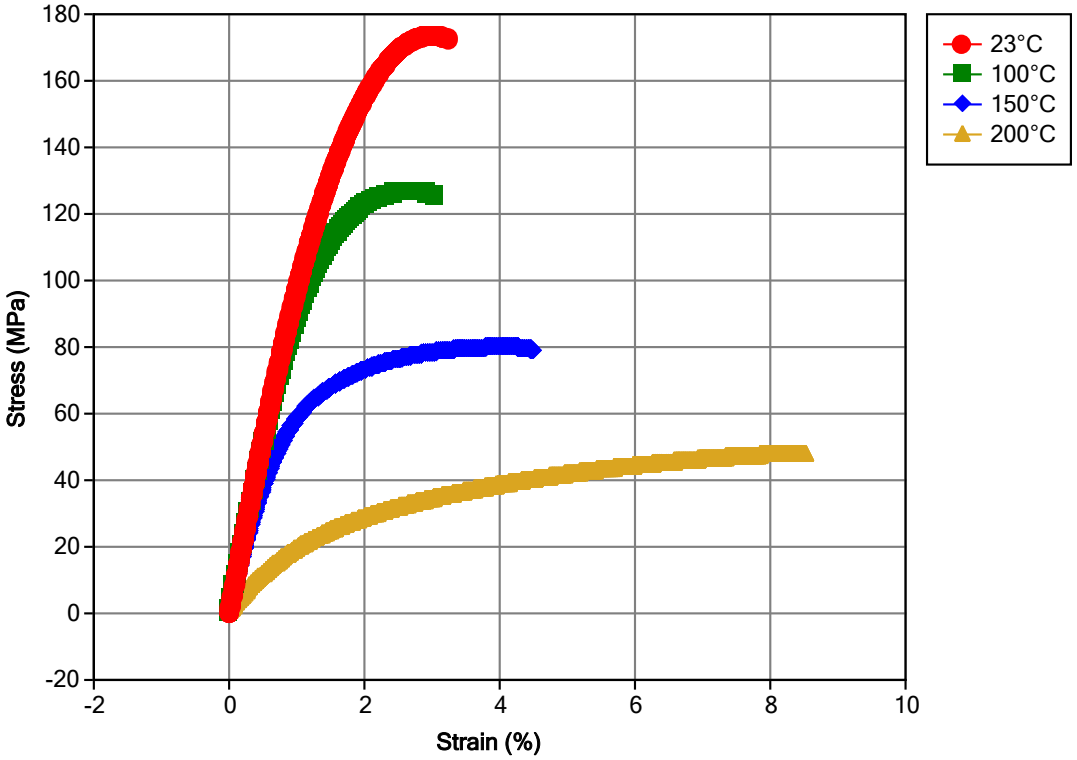
Electrical	Typical Value	Unit	Test method
Surface Resistivity	> 1.9E+17	ohms	ASTM D257
Volume Resistivity	1.9E+17	ohms·cm	ASTM D257
Dielectric Strength (3.00 mm)	17	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.44		
1 kHz	3.44		
1 MHz	3.41		
Dissipation Factor			ASTM D150
60 Hz	1.0E-3		
1 kHz	1.0E-3		
1 MHz	3.0E-3		

Flammability	Typical Value	Unit	Test method
Flame Rating			UL 94
1.6 mm	V-0		
20.3 mm	V-0		

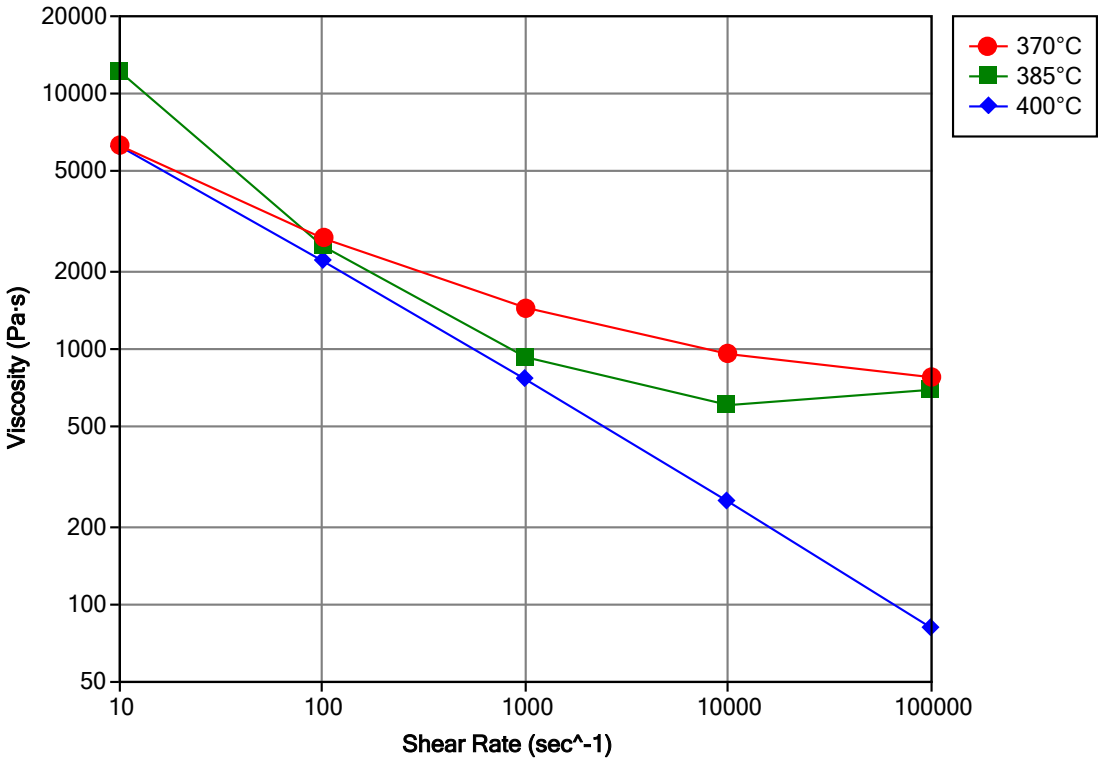
Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	850	Pa·s	ASTM D3835

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	

Isothermal Stress vs. Strain (ISO 11403)



Viscosity vs. Shear Rate (ISO 11403)



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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

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