KetaSpire® KT-820 CF30
polyetheretherketone

KetaSpire® KT-820 CF30 is the low-flow, 30% carbon-fiber reinforced grade of polyetheretherketone (PEEK). Carbon- fiber reinforcement of KetaSpire® PEEK provides the maximum levels of mechanical properties at temperatures approaching 300°C, and the lowest coefficient of linear thermal expansion within the KetaSpire® product family.

KetaSpire® PEEK is produced to the highest industry standards and is characterized by a distinct combination of properties, which include excellent wear resistance, 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.

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Carbon 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	• Automotive Applications • Connectors • Dental Applications • Electrical/Electronic Applications • Gears • Hospital Goods • Industrial Applications	• Medical Devices • Medical/Healthcare Applications • Oil/Gas Applications • Pump Parts • Surgical Instruments • Thrust Washer
Agency Ratings	• ISO 10993	• MIL P-46183 Type III Class 2
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.41		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	1.1	g/10 min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow : 3.18 mm	0.0 to 0.20	%	
Across Flow : 3.18 mm	1.5 to 1.7	%	
Water Absorption (24 hr)	0.10	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [2]	19700	MPa	ASTM D638
--	22800	MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	217	MPa	ISO 527-2/1A/5
--	201	MPa	ASTM D638
Tensile Elongation			
Break [2]	2.0	%	ASTM D638
Break	2.0	%	ISO 527-2/1A/5
Flexural Modulus			
--	17500	MPa	ASTM D790
--	20500	MPa	ISO 178
Flexural Strength			
--	317	MPa	ASTM D790
--	311	MPa	ISO 178
Compressive Strength	173	MPa	ASTM D695
Shear Strength	95.1	MPa	ASTM D732
Poisson's Ratio	0.42		ASTM E132

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	69	J/m	ASTM D256
--	10	kJ/m²	ISO 180
Unnotched Izod Impact			
--	750	J/m	ASTM D4812
--	44	kJ/m²	ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	105		ASTM D785
Durometer Hardness (Shore D, 1 sec)	92		ASTM D2240

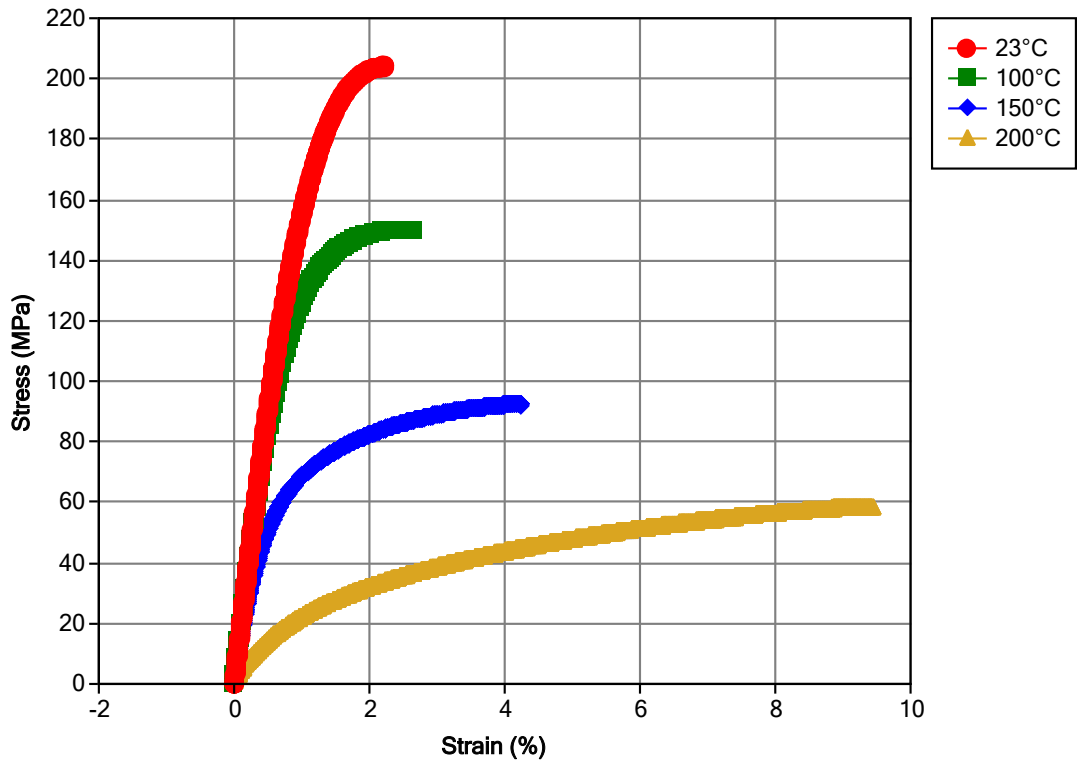
Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Annealed	315	°C	
Glass Transition Temperature	150	°C	ASTM D3418
Peak Melting Temperature	340	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	5.2E-6	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1130	J/kg/°C	
200°C	1620	J/kg/°C	
Thermal Conductivity	0.37	W/m/K	ASTM E1530

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

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	920	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)



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Notes
Typical properties: these are not to be construed as specifications.
[1] 5" x 0.5" x 0.125" bars
[2] 5.0 mm/min

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