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 • 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	• 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
RoHS Compliance	• RoHS Compliant		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding	• Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
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 527-2/1A/1

KetaSpire® KT-820 CF30
polyetheretherketone

Mechanical	Typical Value	Unit	Test method
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

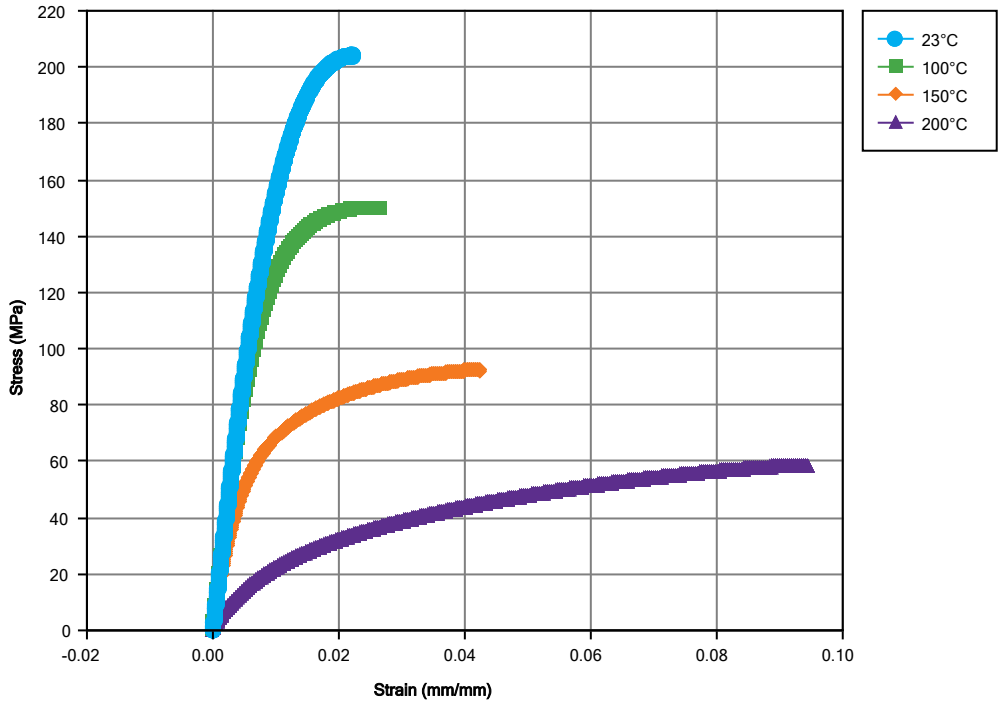
Flammability	Typical Value	Unit	Test method
Flame Rating			UL 94
0.800 mm	V-0		
1.60 mm	V-0		

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	920	Pa·s	ASTM D3835

KetaSpire® KT-820 CF30
polyetheretherketone

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 11403-1)



KetaSpire® KT-820 CF30
polyetheretherketone

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

www.solvay.com

SpecialtyPolymers.EMEA@solvay.com | Europe, Middle East and Africa
SpecialtyPolymers.Americas@solvay.com | Americas
SpecialtyPolymers.Asia@solvay.com | Asia and Australia

Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

Neither Solvay Specialty Polymers nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this product, related information or its use. Some applications of which Solvay's products may be proposed to be used are regulated or restricted by applicable laws and regulations or by national or international standards and in some cases by Solvay's recommendation, including applications of food/feed, water treatment, medical, pharmaceuticals, and personal care. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for use in implantable medical devices. The user alone must finally determine suitability of any information or products for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. The information and the products are for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right.

SOLVAY
asking more from chemistry®