

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

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 • 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
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

Mechanical	Typical Value	Unit	Test method
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			
--	2.7	%	ISO 527-2/1A/5
-- ⁴	2.7	%	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/m ²	ISO 180
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 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

KetaSpire® KT-820 GF30

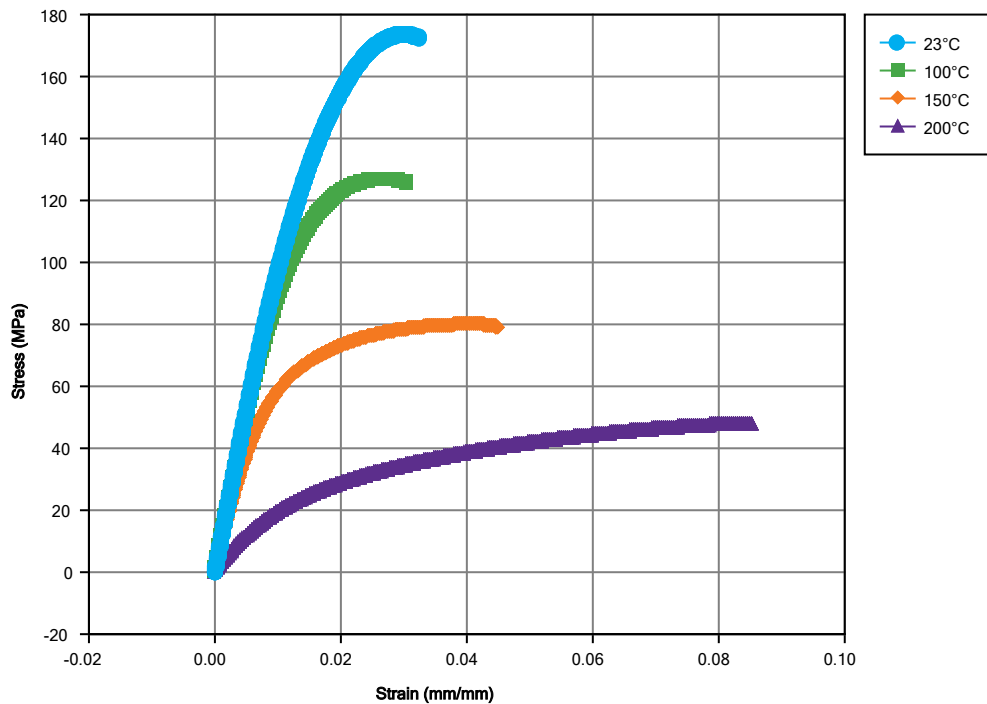
polyetheretherketone

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		

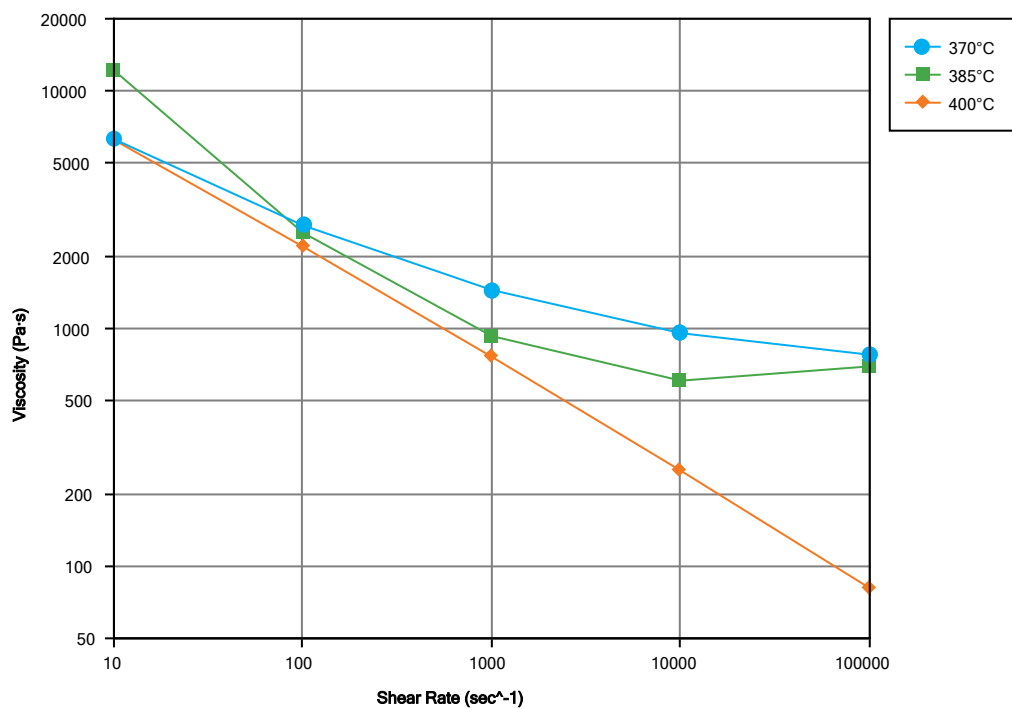
KetaSpire® KT-820 GF30

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

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.

All trademarks and registered trademarks are property of the companies that comprise the Solvay Group or their respective owners.

© 2016 Solvay Specialty Polymers. All rights reserved.

