KetaSpire® XT-920 CF30

polyetheretherketone

KetaSpire® XT-920 CF30 is a 30% carbon fiber reinforced grade of the industry's first true a high-temperature PEEK. This compound provides the maximum level of mechanical properties at temperatures approaching 300°C. It also exhibits the lowest coefficient of linear thermal expansion (CLTE) within the KetaSpire® XT product family.

The PEEK designation is based on the 2:1 ratio of ether-to-ketone functional groups in the polymer backbone. The material provides the exceptional chemical resistance of PEEK along with a 20°C (36°F) higher glass transition temperature and a 45°C (81°F) higher melting temperature than standard PEEK. This increase in thermal performance allows engineers to achieve higher mechanical strength for components used in higher temperature and higher pressure operating environments.

Although other high-temperature polyketones exhibit thermal properties on par with KetaSpire® XT, their chemical resistance is significantly inferior to standard PEEK and KetaSpire® XT. The material's unique combination of properties makes KetaSpire® XT well-suited for applications in oil and gas, transportation, electronics, chemical processing, and other industrial uses.

General

Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• North America
Filler / Reinforcement	• Carbon Fiber, 30% Filler by Weight	
Features	• Chemical Resistant • Fatigue Resistant • Flame Retardant • Good Dimensional Stability • High Heat Resistance	• High Stiffness • High Strength • Radiotranslucent • Steam Resistant
Uses	• Aircraft Applications • Automotive Applications • Connectors • Electrical/Electronic Applications • Gears	• Industrial Applications • Oil/Gas Applications • Pump Parts • Thrust Washer
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.39		ASTM D792
Melt Mass-Flow Rate (MFR) (420°C/2.16 kg)	2.2	g/10 min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow : 2.00 mm	0.0 to 0.30	%	
Across Flow : 2.00 mm	0.60 to 0.80	%	

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [2]	26300	MPa	ASTM D638
--	26400	MPa	ISO 527-2/1A/1

KetaSpire® XT-920 CF30
polyetheretherketone

Mechanical	Typical Value	Unit	Test method
Tensile Stress			
Yield	262	MPa	ISO 527-2/1A/5
--	248	MPa	ASTM D638
Tensile Elongation			
Break [2]	1.9	%	ASTM D638
Break	1.8	%	ISO 527-2/1A/5
Flexural Modulus			
--	23200	MPa	ASTM D790
--	22800	MPa	ISO 178
Flexural Strength			
--	364	MPa	ASTM D790
--	367	MPa	ISO 178
Compressive Strength	190	MPa	ASTM D695
Shear Strength	107	MPa	ASTM D732

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	93	J/m	ASTM D256
--	8.0	kJ/m²	ISO 180
Unnotched Izod Impact			
--	830	J/m	ASTM D4812
--	51	kJ/m²	ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	106		ASTM D785
Durometer Hardness (Shore D, 1 sec)	89		ASTM D2240

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load [3]			ASTM D648
1.8 MPa, Annealed	340	°C	
Glass Transition Temperature	170	°C	ASTM D3418
Peak Melting Temperature	385	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	4.1E-6	cm/cm/°C	ASTM E831

Flammability	Typical Value	Unit	Test method
Flame Rating [4]			UL 94
0.8 mm	V-0		
1.6 mm	V-0		

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (420°C, 1000 sec^-1)	820	Pa·s	ASTM D3835

Injection	Typical Value	Unit
Drying Temperature	150	°C
Drying Time	4.0	hr
Rear Temperature	405	°C
Middle Temperature	405	°C
Front Temperature	410	°C
Nozzle Temperature	410	°C

KetaSpire® XT-920 CF30
polyetheretherketone

Injection	Typical Value	Unit
Mold Temperature	205 to 230	°C
Injection Rate	Fast	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

Notes

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

[1] 60mm x 60mm x 2mm

[2] 5.0 mm/min

[3] 2 hours at 230°C

[4] Based on internal testing of base resin. UL certification is pending.

www.solvay.com

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

SOLVAY
asking more from chemistry®