

AvaSpire® AV-621 CF30 polyaryletherketone

AvaSpire® AV-621 CF30 is a 30% carbon fiber reinforced version of AvaSpire® AV-621. It offers better dimensional stability and warp resistance than 30% carbon fiber reinforced PEEK. The AV-621 CF30 grade offers the highest strength, stiffness, and fatigue resistance of any AV-621 based grade. Furthermore, this resin generally retains most of the desirable ultra-performance attributes of carbon fiber reinforced PEEK including chemical resistance, fatigue resistance, and long term thermal oxidative stability.

applications across a number of industries, including healthcare, transportation, electronics, and chemical processing.

This resin can be easily melt processed by injection molding using standard equipment. The melt processing behavior of AV-621 CF30 is very similar to that of 30% CF reinforced PEEK. The lower melt flow of AV-621 CF30 is well suited for extrusion applications while offering a similar property profile to AV-651 CF30.

The excellent balance of properties of AV-621 CF30 makes this grade well suited for a broad range of

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	• Chemical Resistant • Fatigue Resistant • Flame Retardant • Good Dimensional Stability	• High Heat Resistance • High Stiffness • High Strength
Uses	• Medical/Healthcare Applications • Pump Parts	• Seals
Agency Ratings	• ISO 10993	
RoHS Compliance	• Contact Manufacturer	
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.42		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	1.0	g/10 min	ASTM D1238
Molding Shrinkage ¹			ASTM D955
Flow : 3.18 mm	0.0 to 0.20	%	
Across Flow : 3.18 mm	0.90 to 1.1	%	
Water Absorption (24 hr)	0.10	%	ASTM D570

AvaSpire® AV-621 CF30

polyaryletherketone

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- ²	17200	MPa	ASTM D638
--	23300	MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	196	MPa	ISO 527-2/1A/5
-- ²	181	MPa	ASTM D638
Tensile Elongation			
Break ²	2.2	%	ASTM D638
Break	2.2	%	ISO 527-2/1A/5
Flexural Modulus			
--	15100	MPa	ASTM D790
--	21300	MPa	ISO 178
Flexural Strength			
--	276	MPa	ASTM D790
--	296	MPa	ISO 178
Compressive Strength	152	MPa	ASTM D695
Shear Strength	91.0	MPa	ASTM D732
Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	69	J/m	ASTM D256
--	9.6	kJ/m ²	ISO 180
Unnotched Izod Impact			
--	640	J/m	ASTM D4812
--	39	kJ/m ²	ISO 180
Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	101		ASTM D785
Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load ³			ASTM D648
1.8 MPa, Annealed, 3.20 mm	210	°C	
Glass Transition Temperature	160	°C	ASTM D3418
Peak Melting Temperature	340	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	5.0E-6	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1350	J/kg/°C	
200°C	1810	J/kg/°C	
Thermal Conductivity	0.35	W/m/K	ASTM E1530
Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec ⁻¹)	790	Pa·s	ASTM D3835
Injection	Typical Value	Unit	
Drying Temperature	149	°C	

AvaSpire® AV-621 CF30

polyaryletherketone

Injection	Typical Value	Unit
Drying Time	4.0	hr
Rear Temperature	366	°C
Middle Temperature	371	°C
Front Temperature	377	°C
Nozzle Temperature	382	°C
Processing (Melt) Temp	366 to 388	°C
Mold Temperature	149 to 177	°C
Injection Rate	Fast	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	

Injection Notes

Back Pressure: Minimum

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

³ 2 hours at 200°C

www.syensqo.com

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 Syensqo 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 Syensqo'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 Syensqo'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 Syensqo or their respective owners.

© 2024 2023 Syensqo. All rights reserved.

