AvaSpire® AV-651 CF30

Polyaryletherketone

Solvay Specialty Polymers

Message:

AvaSpire AV -651 CF30 is a AvaSpire AV-651 30% carbon fiber reinforced brand. Compared with 30% carbon fiber reinforced PEEK, the formula has the advantages of better dimensional stability and more warpage resistance during injection molding. Among all AV-651 series materials, AV -651 CF30 brand has the highest strength, rigidity and fatigue resistance. In addition, this resin usually retains most of the useful ultra-high performance advantages of carbon fiber reinforced PEEK, including chemical resistance, fatigue resistance, and long-term thermal oxidation stability. The excellent balance performance of the AV- 651 CF30 makes it ideal for a wide range of applications including healthcare, transportation, electronics, oil and gas industries. This resin can be easily melt processed by injection molding on standard equipment. The melting treatment performance of AV-651 CF30 is generally very close to 30% carbon fiber reinforced PEEK. In the case of having the same performance characteristics as AV-651 CF30 and extruding at the same time, CF30 grade AV-621 low melt fluidity is considered to be more suitable for extruded products.

General Information	
Filler / Reinforcement	Carbon fiber reinforced material, 30% filler by weight
Features	Good dimensional stability Electron beam disinfection Radioactive permeable Radiation disinfection Rigidity, high High strength Pressure cooker disinfection Good disinfection Ethylene oxide disinfection Anti-gamma radiation Good chemical resistance Fatigue resistance Heat resistance, high Steam resistance thermal disinfection Disinfect with steam Flame retardancy
Uses	Pump parts Seals Surgical instruments Dental application field Medical/nursing supplies Medical equipment Medical devices
RoHS Compliance	RoHS compliance

Appearance	Black
Forms	Particle
Processing Method	Machining Profile extrusion molding Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.42	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	4.5	g/10 min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow: 3.18mm	0.0 - 0.20	%	ASTM D955
Transverse flow: 3.18mm	0.90 - 1.1	%	ASTM D955
Water Absorption (24 hr)	0.20	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	104		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [2]	20700	MPa	ASTM D638
--	21100	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	192	MPa	ISO 527-2/1A/5
-- [3]	184	MPa	ASTM D638
Tensile Elongation			
Fracture [4]	1.5	%	ASTM D638
Fracture	1.5	%	ISO 527-2/1A/5
Flexural Modulus			
--	17200	MPa	ASTM D790
--	19100	MPa	ISO 178
Flexural Strength			
--	262	MPa	ASTM D790
--	280	MPa	ISO 178
Compressive Strength	168	MPa	ASTM D695
Shear Strength	94.0	MPa	ASTM D732
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact			
--	59	J/m	ASTM D256
--	8.4	kJ/m²	ISO 180
Unnotched Izod Impact			
--	590	J/m	ASTM D4812
--	37	kJ/m²	ISO 180
Thermal	**Nominal Value**	**Unit**	**Test Method**

Deflection Temperature Under Load [5] (1.8 MPa, Annealed, 3.20 mm)	212	°C	ASTM D648
Glass Transition Temperature	158	°C	ASTM D3418
Peak Melting Temperature	345	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	8.2E-6	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1320	J/kg/°C	DSC
200°C	1770	J/kg/°C	DSC
Thermal Conductivity	0.36	W/m/K	ASTM E1530
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C, 1000 sec^-1)	540	Pa·s	ASTM D3835
Injection	Nominal Value	Unit	
Drying Temperature	149	°C	
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 - 388	°C	
Mold Temperature	149 - 177	°C	
Injection Rate	Fast		
Screw Compression Ratio	2.0 : 1.0 - 3.0 : 1.0		
Injection instructions			
保压压力:最低值			
NOTE			
1.	5" x 0.5" x 0.125" bars		
2.	5.0 mm/min		
3.	5.0 mm/min		
4.	5.0 mm/min		
5.	200°C,2 hours		

Recommended distributors for this material

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