

## Solvay Specialty Polymers Hyflon® PFA 420 Perfluoroalkoxy (PFA) (Unverified Data\*\*)

Category : Polymer , Thermoplastic , Fluoropolymer , PFA

### Material Notes:

Hyflon® PFA is a family of semi-crystalline, melt processable perfluoropolymers which combine excellent mechanical characteristics to unique properties such as chemical inertness, heat resistance, inherent flame resistance, low surface energy and exceptional dielectric properties. PFA resins are designed to retain their properties over a wide range of temperatures (-196/260°C or -320/500°F) and are the material of choice in applications such as linings in the Chemical Process Industry, specialty cables, semiconductor industry, aero space, etc. Hyflon® PFA 420 is a high molecular weight, low melt flow rate multi-purpose resin designed for pipe, cable and stock shapes extrusion, injection, compression, and transfer molding. Hyflon PFA 420 is an ASTM D3307 - Type II resin. Additional Information: PROCESSING - Because PFA is corrosive in the melt, machinery used to process Hyflon® is typically lined with nickel content alloys. Clean, reworked material can be used up to 25% in weight. HEALTH SAFETY AND ENVIRONMENT - Hyflon PFA 420 is a very inert polymer and it is not harmful if used and handled according to standard processing procedures. If handled inappropriately, it may release harmful toxic chemicals. Please refer to the Material Safety Data Sheets for more information on handling and safety. PACKAGING AND STORAGE - Hyflon PFA 420 resin is available in 25 kg (55 lbs) and 500 kg (1102 lbs) packaging. Though it has an indefinite shelf life, it is recommended to store it in a clean area, protected by direct sun light and possible contamination. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Solvay-Specialty-Polymers-Hyflon-PFA-420-Perfluoroalkoxy-PFA-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Hyflon-PFA-420-Perfluoroalkoxy-PFA-nbspUnverified-Data.php)

Physical Properties	Metric	English	Comments
Specific Gravity	2.12 - 2.17 g/cc	2.12 - 2.17 g/cc	ASTM D792
Melt Flow	1.5 - 3.0 g/10 min @Load 5.00 kg, Temperature 372 °C	1.5 - 3.0 g/10 min @Load 11.0 lb, Temperature 702 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	59	59	ASTM D2240
Tensile Strength at Break	>= 26.0 MPa @Temperature 23.0 °C	>= 3770 psi @Temperature 73.4 °F	ASTM D1708
Elongation at Break	>= 300 % @Temperature 23.0 °C	>= 300 % @Temperature 73.4 °F	ASTM D1708
Tensile Modulus	0.500 - 0.600 GPa @Temperature 23.0 °C	72.5 - 87.0 ksi @Temperature 73.4 °F	1.0 mm/min; ASTM D1708
Flex Crack Resistance	90000 - 120000 @Thickness 0.300 mm	90000 - 120000 @Thickness 0.0118 in	Cycles; ASTM D2176

Charpy Impact, Notched Mechanical Properties	NB Metric	NB English	ASTM D256 Comments
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Thermal Properties	Metric	English	Comments
Heat of Fusion	25.0 - 35.0 J/g	10.8 - 15.1 BTU/lb	Crystallization Heat; DSC
	25.0 - 35.0 J/g	10.8 - 15.1 BTU/lb	DSC
CTE, linear, Parallel to Flow	120 - 200 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	66.7 - 111 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM D696
Specific Heat Capacity	0.900 - 1.10 J/g- $^{\circ}\text{C}$ @Temperature 23.0 $^{\circ}\text{C}$	0.215 - 0.263 BTU/lb- $^{\circ}\text{F}$ @Temperature 73.4 $^{\circ}\text{F}$	DSC
Thermal Conductivity	0.200 W/m-K @Temperature 40.0 $^{\circ}\text{C}$	1.39 BTU-in/hr-ft $^2\cdot^{\circ}\text{F}$ @Temperature 104 $^{\circ}\text{F}$	ASTM C177
Melting Point	300 - 310 $^{\circ}\text{C}$	572 - 590 $^{\circ}\text{F}$	ASTM D3307
Crystallization Temperature	275 - 285 $^{\circ}\text{C}$	527 - 545 $^{\circ}\text{F}$	Peak, DSC
Maximum Service Temperature, Air	260 $^{\circ}\text{C}$	500 $^{\circ}\text{F}$	Continuous
Flammability, UL94	V-0	V-0	UL 94
Oxygen Index	95 %	95 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00\text{e}+17$ ohm-cm	$\geq 1.00\text{e}+17$ ohm-cm	ASTM D257
Surface Resistance	$\geq 1.00\text{e}+17$ ohm	$\geq 1.00\text{e}+17$ ohm	ASTM D257
Dielectric Constant	2.1 @Frequency 100000 Hz, Temperature 23.0 $^{\circ}\text{C}$	2.1 @Frequency 100000 Hz, Temperature 73.4 $^{\circ}\text{F}$	ASTM D150
	2.1 @Frequency 50.0 Hz, Temperature 23.0 $^{\circ}\text{C}$	2.1 @Frequency 50.0 Hz, Temperature 73.4 $^{\circ}\text{F}$	ASTM D150
Dielectric Strength	35.0 - 40.0 kV/mm	889 - 1020 kV/in	ASTM D149
Dissipation Factor	$\leq 0.00050$ @Frequency 100000 Hz, Temperature 23.0 $^{\circ}\text{C}$	$\leq 0.00050$ @Frequency 100000 Hz, Temperature 73.4 $^{\circ}\text{F}$	ASTM D150
	$\leq 0.00050$ @Frequency 50.0 Hz,	$\leq 0.00050$ @Frequency 50.0 Hz,	ASTM D150

Electrical Properties	Temperature 23.0 °C Metric	Temperature 73.4 °F English	Comments
Descriptive Properties	Value		Comments
Agency Ratings	ASTM D 3307 Type II		
Availability	Africa & Middle East		
	Asia Pacific		
	Europe		
	North America		
	South America		
Features	Flame Retardant		
	High Heat Resistance		
	High Molecular Weight		
	Low Flow		
	Semi Crystalline		
Forms	Pellets		
Generic	PFA		
Processing Method	Compression Molding		
	Extrusion		
	Injection Molding		
	Resin Transfer Molding		
Uses	Aerospace Applications		
	Cable Jacketing		
	Liners		
	Piping		
	Semiconductor Molding Compounds		

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