

# Hyflon® PFA P420

## perfluoroalkoxy

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 P420 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 P420 is an ASTM D3307 – Type II resin.

### General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• Flame Retardant • High Heat Resistance • High Molecular Weight	• Low Flow • Semi Crystalline
Uses	• Aerospace Applications • Cable Jacketing • Liners	• Piping • Semiconductor Applications
Agency Ratings	• ASTM D3307 Type II	
Forms	• Pellets	
Processing Method	• Compression Molding • Extrusion	• Injection Molding • Transfer Molding

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	2.13 to 2.18		ASTM D792
Melt Mass-Flow Rate (MFR) (372°C/5.0 kg)	1.5 to 3.0	g/10 min	ASTM D1238

Mechanical	Typical Value	Unit	Test method
Tensile Modulus <sup>1</sup> (23°C)	500 to 600	MPa	ASTM D1708
Tensile Strength (Break, 23°C)	> 26.0	MPa	ASTM D1708
Tensile Elongation (Break, 23°C)	> 300	%	ASTM D1708
Flex Life (300.0 µm)	9.0E+4 to 1.2E+5	Cycles	ASTM D2176

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength	No Break		ASTM D256

Hardness	Typical Value	Unit	Test method
Durometer Hardness (Shore D)	59		ASTM D2240

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Thermal	Typical Value	Unit	Test method
Continuous Use Temperature	260	°C	
Melting Temperature	300 to 310	°C	ASTM D3307
Peak Crystallization Temperature (DSC)	275 to 285	°C	DSC
CLTE – Flow	1.2E-4 to 2.0E-4	cm/cm/°C	ASTM D696
Specific Heat (23°C)	900 to 1100	J/kg/°C	DSC
Thermal Conductivity (40°C)	0.20	W/m/K	ASTM C177
Crystallization Heat	25.0 to 35.0	J/g	DSC
Heat of Fusion	25.0 to 35.0	J/g	DSC

Electrical	Typical Value	Unit	Test method
Surface Resistivity	> 1.0E+17	ohms	ASTM D257
Volume Resistivity	> 1.0E+17	ohms-cm	ASTM D257
Dielectric Strength	35 to 40	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
23°C, 50 Hz	2.10		
23°C, 100 kHz	2.10		
Dissipation Factor			ASTM D150
23°C, 50 Hz	< 5.0E-4		
23°C, 100 kHz	< 5.0E-4		

Flammability	Typical Value	Unit	Test method
Flame Rating	V-0		UL 94
Oxygen Index	95	%	ASTM D2863

### 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 P420 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 P420 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.

## Notes

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

<sup>1</sup> 1.0 mm/min

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