Teflon® AF 1600

Fluoropolymer

DuPont Fluoropolymers

Message:

Teflon® AF is a family of amorphous fluoropolymers. These materials are similar to other amorphous polymers in optical clarity and mechanical properties, including strength. They also resemble fluoropolymers in their performance over a wide range of temperatures, outstanding electrical properties, and chemical resistance. They are distinct from other fluoropolymers in that they are soluble in selected solvents and have high gas permeability, high compressability, high creep resistance, and low thermal conductivity. They have the lowest dielectric constant of any known fluoropolymer.

General Information	
Features	Amorphous
	Good Chemical Resistance
	Good Creep Resistance
	Good Electrical Properties
	High Gas Permeability
Uses	Coating Applications
	Film
	Rods
	Sheet
	Tubing
Forms	Pellets
Processing Method	Compression Molding
	Dip Coating
	Extrusion
	Injection Molding
	Spraying

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.78	g/cm³	ASTM D792
Water Absorption (24 hr)	< 0.010	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (23°C)	103		ASTM D785
Durometer Hardness			ASTM D2240
Shore D, 70°C	70		
Shore D, 23°C	77		
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	1600	MPa	ASTM D638
Tensile Strength			ASTM D638

Yield, 23°C	26.4 to 28.4	MPa	
Yield, 150°C	0.800 to 12.6	MPa	
23°C	25.4 to 28.4	MPa	
150°C	1.60 to 13.8	MPa	
Tensile Elongation			ASTM D638
Break, 23°C	12 to 22	%	
Break, 150°C	76 to 100	%	
Flexural Modulus			ASTM D790
23°C	1700 to 1900	MPa	
150°C	900 to 1100	MPa	
Taber Abrasion Resistance (2000 Cycles)	107	mg	
Films	**Nominal Value**	**Unit**	**Test Method**
Oxygen Permeability	340	Barrer	
Nitrogen Permeability	130	Barrer	
Water Permeation	1140	Barrer	
Abbe Number	92.0		
Contact Angle - with Water	104	°	
Surface Energy	16	dyne/cm	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	156	°C	
1.8 MPa, Unannealed	154	°C	
Glass Transition Temperature	155 to 165	°C	ASTM D3418
CLTE - Flow	2.6E-4	cm/cm/°C	ASTM E831
Electrical	**Nominal Value**	**Unit**	**Test Method**
Dielectric Strength	21	kV/mm	ASTM D149
Dielectric Constant	1.93		ASTM D150
Dissipation Factor	1.0E-4 to 2.0E-4		ASTM D150
Optical	**Nominal Value**	**Unit**	**Test Method**
Refractive Index	1.310		ASTM D542
Transmittance	> 95.0	%	ASTM D1003
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity (250°C, 100 sec^-1)	2660	Pa·s	ASTM D3835

Recommended distributors for this material

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