

PTFE Unfilled Virgin Grade



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PHYSICAL PROPERTIES

Virgin PTFE is almost universally inert as a result of the molecular structure of the resin. The molecules are closely packed together and consist of long chains of carbon atoms protected by a tightly held sheath of fluorine atoms. Components made of this material exhibit excellent impermeability to most corrosive liquids, vapours, and gases even at elevated temperatures as well as under pressure and vacuum. They are affected only by molten alkali metals, fluorine and chlorine trifluoride at elevated temperatures and pressure. Virgin PTFE has exceptional electrical and

Property	Method	Unit	Nominal Value*
Density	ASTM D-792	lbs/ft ³	2.18
Tensile strength	ASTM D-638	psi	4000
Tensile modulus	ASTM D-638	psi	n/a
Flexural modulus	ASTM D-790	psi	n/a
Flexural strength	ASTM D-790	psi	n/a
Izod impact	ASTM D-4020	ft-lbs/in ²	2.9
IZOD impact notched	ASTM D-2240	ft-lbs/in ²	n/a
Compressive strength at 25% strain	ASTM D-695	psi	4485
Compressive modulus	ASTM D-621	% at 1000 psi	6.4 x 10 ⁴
Environmental stress crack resistance	ASTM D-1693	hrs.	n/a
Hardness	ASTM D-2240	Shore D	51
Static friction	ASTM D-1894	Unitless	0.1
Dynamic friction	ASTM D-1894	Unitless	0.08
Impact brittleness temperature	ASTM D-746	°F	n/a
Coefficient of linear thermal expansion 78-200°F	ASTM D-696	10 ⁵ /in/in/°F	6.8
Coefficient of linear thermal expansion 78-300°F	ASTM D-696	10 ⁵ /in/in/°F	7
Coefficient of linear thermal expansion 78-400°F	ASTM D-696	10 ⁵ /in/in/°F	7.6
Coefficient of linear thermal expansion 78-500°F	ASTM D-696	10 ⁵ /in/in/°F	9.1
Vicat softening temperature	ASTM D-1525	°F	n/a
Max. operating temp.		°F	500
Dielectric Strength (Vper mil)	ASTM D-149a	in air	1500
Dielectric Constant	ASTM D150-54T	at 60 cps	2.1
Dissipation Factor	ASTM D-150-54T	at 60 cps	0.0003
Volume Resistivity	ASTM D-257	Ohm-cm	10 ¹⁷
Surface Resistivity	ASTM D-257	Ohm	10 ¹⁵
Water absorption 24hrs.	ASTM D-570	%	0

*All values are determined on specimens prepared according to ASTM 1248-84 "Standard Specifications for Polyethylene Plastic Molding and Extrusion Materials". Nominal values should not be interpreted as specifications.

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