

Teflon® PTFE (Polytetrafluoroethylene)

PTFE resin is in a class of paraffinic polymers that have some or all of the hydrogen replaced by fluoride. The original PTFE resin was invented by DuPont in 1938 and called Teflon®.

PTFE is a crystalline polymer with a melting point of about 621° F (327° C). Density is 2.13 to 2.19 gm/cc. PTFE has exceptional resistance to chemicals. Its dielectric constant (2.1) and loss factor are low and stable across wide temperature and frequency range. PTFE has useful mechanical properties from cryogenic temperatures at 500° F (280° C) continuous service temperatures. Its coefficient of friction is lower than almost any other material. It also has a high oxygen level.

Property	ASTM Test Method	Units	Teflon® PTFE
Physical			
Specific Gravity	D792		2.13-2.22
Mechanical			
Tensile Strength	D1457 D1708 D638	psi	3,000-5,000
Elongation	D1457 D1708 D638	%	300-500
Flexural Modulus	D790	psi	72,000
Folding Endurance	D2176	(MIT) cycles	>10 ⁶
Impact Strength	D256	ft-lb/in	3.5
Hardness, Shore D	D2240		50-65
Coefficient of Friction, Dynamic	D1894	<10 ft/min	0.1
Thermal			
Melting Point	D3418	°F	621
Upper Service Temperature (20,000h)	UL746B	°F	500
Flame Rating	UL94		V0
Limiting Oxygen Index	D2863	%	>95
Heat of Combustion	D240	Btu/lb	2,200

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.