

PNF™ Technical Data

Materials Science Technology is pleased to introduce a new line of high-performance materials PNF™.

PNF™ polymers are based on an inorganic backbone containing alternating phosphorus and nitrogen atoms joined by unsaturated bonds. The phosphorus-nitrogen backbone imparts special properties not found in traditional organic polymers including a broad operating temperature range (-70°C to 200°C), materials flexibility, gamma-radiation stability, oxidative stability and other valuable properties.

In addition, various side groups can be substituted to further enhance desired materials properties.

PNF™ is our fluoroalkoxy-substituted polyphosphazene offering exceptional solvent resistance, high modulus/low compression set properties, fatigue resistance, excellent surge suppression and other valuable properties not found in conventional fluorocarbon, perfluorocarbon, fluorosilicone and nitrile elastomers. PNF™ has superb dampening characteristics, excellent fatigue resistance, low swelling and bonds well to conventional substrates.

In addition to standard product offerings, Materials Science Technology develops phosphazene systems for emerging markets including biomedical, energy, automotive, exploration, defense and flame retardant applications. Please contact one of our research associates by phone, email or visit our website.

TYPICAL PROPERTIES OF PNF

Physical Property	Units	Value Range
Temperature range	°C	-70 to 200
Brittle point	°C	-70
TR-10	°C	-58
Hardness	Shore A	35 – 90
Density	g/ml	1.75 – 1.85
Tensile strength	MPa (psi)	6.9 – 13.8 (1000 – 2000)
100% Modulus	MPa (psi)	2.8-14.8 (400 – 2000)
Elongation	%	75 – 250
Compression set (70 hr at 150°C)	%	15-55