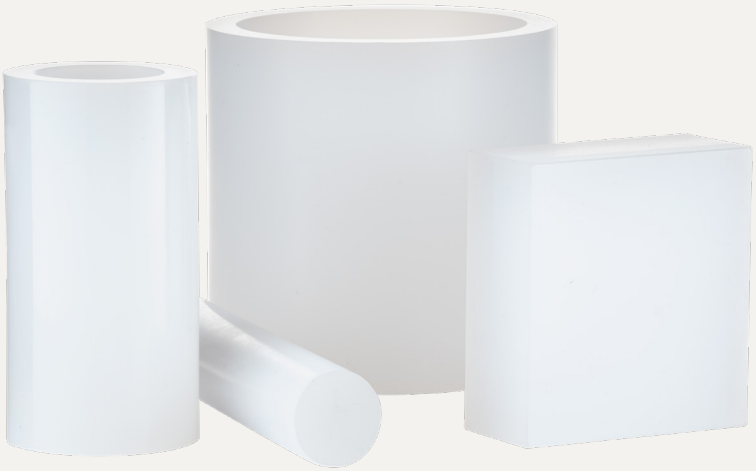
AFTON PLASTICS

PCTFE: Polychloro-trifluoroethylene



PRODUCT DESCRIPTION

Chlorine and fluorine, in the molecule of this unique fluoropolymer, contribute to its high compressive strength, low deformation under load, and stability within a wide thermal range.

Afton Plastics processes the following grade of PCTFE:

Neoflon® PCTFE grade M-400H

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member iapd the performance plastics association

PRODUCT BENEFITS

- Dimensionally stable, rigid, and resistant to cold flow
- Very low gas permeation and outgassing
- Near zero moisture absorption
- Excellent chemical resistance
- High compressive strength
- Low deformation under load
- Non-flammable
- Temperature range: -400° to +380°F
- Radiation resistance

TYPICAL APPLICATIONS

- Cryogenic and chemical processing components
- Seals and gaskets
- Aerospace valve seats, pump parts, impellers, diaphragms and plugs
- Laboratory instruments
- Nuclear service / high radiation exposure
- Liquid oxygen and liquid nitrogen valve linings

MATERIAL CLASS

- ASTM D 1430-89 Type 1, Grade 2
- ASTM D 1430-95 Type 1, Grade 3
- ASTM D 1430-17 Group 1, Class 1, Grade 3
- ASTM D 7211-18 (section 8.8)
- ASTM D 7194-19 (section 10.4)
- L-P 385C (cancelled October 6th, 1988 and replaced with ASTM D 1430)
- FDA compliant per 21 CFR177.1380
- USP Class VI compliant

Commonly referred to as **Kel-F®**
Neoflon® is a registered trademark of Daikin Industries

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Data Sheet - **Neoflon®** PCTFE

PROPERTY			GRADE
MECHANICAL/PHYSICAL	**ASTM METHOD**	**UNIT**	**M - 400H**
Zero Strength Time	D1430	seconds	301 - 450
Specific Gravity	D792	g/cm³	2.11 - 2.17
Water Absorption, 24 hr.	D570	%	0
Tensile Strength, 23°C	D638	psi	4,860 - 5,710
Elongation, 23°C	D638	%	100 - 250
Compressive Strength, 23°C at 0.2% Offset	D695	psi	5,280 - 6,000
Compressive Strength, 23°C at 1% Strain	D695	psi	1,570 - 1860
Impact Strength, 23°C, Notched Izod	D256	ft-lb/in	2.5 - 3.5
Flexural Strength	D790	psi	9,570 - 10,300
Durometer Hardness, Shore D	D2240	D	85 - 95
Deformation Under Load, 25°C, 24 hrs/70 kg	D621	%	≤ 0.2
THERMAL			
Melting Point	D1430	°C	210 - 212
Deflection Temperature (66 psi)	D648	°C	126
Maximum Service Temperature		°C	193
Thermal Conductivity	C177	Btu/ft-hr-°F	1.45
Thermal Expansion (+30°C to - 30°C)	D696	cm/cm/°C	7.0×10^{-5}
Thermal Expansion (-30°C to -100°C)	D696	cm/cm/°C	5.1×10^{-5}
Flammability	D635		non-flammable
ELECTRICAL			
Surface Resistivity, 100% R.H.	D257	ohm-sq	10^{15}
Volume Resistivity, 50% R.H.	D257	ohm-cm	2×10^{17}
Dielectric Strength (68 mil film)	D149	Volts/mil	500
Dielectric Constant, 23°C, 10^3 Hz	D150		2.6
Dissipation Factor, 23°C, 10^3 Hz	D150		0.02
Arc Resistance	D495	seconds	360

Information provided by Daikin America, Inc. **Neoflon®** is a registered trademark of Daikin Industries.
Note: The data provided in this table are typical for the resins tested and do not represent product specifications.
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