



EVERFLON™

PFA 410

Pure Resilience. Engineered to Endure.

The next-generation fluoroplastic combining uncompromising chemical inertness with extraordinary flex endurance.

High-Performance Perfluoroalkoxy (PFA) Molding & Extrusion Resin | Direct Equivalent Benchmark to Premium Industrial PFA Resins.

Overview & Core Philosophy

The Balance of Strength. Perfected.

Where the ease of conventional processing meets the uncompromising integrity of PTFE.

Everflon™ PFA 410 is a premium, medium melt-flow rate fluoropolymer resin in pellet form, engineered for mission-critical industrial, semiconductor, chemical handling, and aerospace applications. Designed to deliver superior environmental stress-crack resistance (ESCR) and extended MIT folding endurance, Everflon™ PFA 410 withstands severe mechanical flexing and thermal shocks where ordinary materials fail.

With exceptional melt strength and thermal stability, it allows manufacturers to push extrusion speeds and molding cycles further—maximizing production efficiency without sacrificing mechanical or electrical performance.



Key Feature Pillars

Engineered to Extremes. Refined to the Core.

Four breakthrough capabilities. One uncompromising standard of industrial perfection.

Flex Life & Toughness | Bend Without Breaking.

Exceptional MIT folding endurance engineered for dynamic stress.

- Engineered with molecular consistency, Everflon™ PFA 410 delivers high flexural endurance (typically rated at 50,000+ MIT cycles), making it the premier choice for bellows, dynamic diaphragms, flexible tubing, and high-vibration fluid transfer assemblies.

Thermal & Chemical Immunity | Impervious to the Elements.

Continuous 260°C\ (500°F) rating. Universal solvent resistance.

- Retaining high mechanical tensile strength and elongation even after prolonged thermal exposure, Everflon™ PFA 410 resists nearly all industrial acids, aggressive bases, and high-purity solvents while providing UL 94 V-0 flame retardancy and an oxygen index exceeding 95%.

Precision Processing | Effortless Flow. Relentless Speed.

High melt strength tailored for rapid draw-down and zero defect rates.

- Featuring an optimized melt flow rate (MFR ~5 g/10 min), Everflon™ PFA 410 easily accommodates standard melt extrusion, high-pressure injection molding, and compression processes with wider die openings and lower wall-thickness variability.

Dielectric Integrity | Signal Clarity in Extreme Environments.

High melt strength tailored for rapid draw-down and zero defect rates.

- With a stable dielectric constant of ~2.03 and negligible loss tangent even across multi-gigahertz frequencies, it serves as the benchmark insulation resin for aerospace, satellite communication, and demanding mil-spec wire and cable assemblies.

Applications

Engineered for What Matters Most.

From sub-sea instrumentation to cleanroom semiconductor handling.

Semiconductor & Ultra-Pure Fluid Handling: High-purity valves, chemical pumps, etched manifolds, fittings, and seamless fluid-handling linings.

Industrial & Chemical Processing (CPI): Heavy-duty bellows, corrosion-resistant column linings, and flexible expansion joints.

Aerospace & Defense Cabling: Ultra-thin, flame-resistant wire insulation, coaxial jacketings, and harness sleeves.

Analytical & Medical Fluidics: Precision extruded tubing, chromatography lines, and high-temperature diagnostic probes.

Processing & Handling Guidelines

Crafted for Efficiency.

Seamless integration with existing thermoplastic infrastructure.

Extrusion & Injection Setup

Everflon™ PFA 410 can be processed via conventional melt extruders and reciprocating screw injection molding equipment. Corrosion-resistant, nickel-rich alloys (such as Hastelloy® or Inconel®) must be used for components in contact with molten resin.

Melt Temperatures

Recommended processing melt temperature ranges up to approximately 390°C\ (730°F). A long barrel length-to-diameter (L/D) ratio is recommended to provide adequate residence time for uniform heating.

Safety & Storage

Maintain proper local exhaust ventilation (LEV) to exhaust vapors generated during high-temperature processing. Product characteristics are not affected by storage time, provided ambient conditions prevent airborne contamination and moisture condensation.

Technical
Profile

The Architecture of Performance.

Standardized testing according to ASTM and ISO international protocols.

Parameter	Test Method	Unit	Typical Value
Melt flow rate	ASTM D3307 / ISO 12086	g/10 min	6~14 g/10 min
Melting point	ASTM D4591	°C	305 °C
Specific gravity	ASTM D792	—	2.15
Tensile strength at 23 °C	ASTM D3307 / ISO 12086	MPa	>25
Elongation at break at 23 °C	ASTM D3307 / ISO 12086	%	>330
Flexural modulus at 23 °C	ASTM D790 / ISO 178	MPa	550
MIT Folding Endurance (8 mil)	ASTM D2176	Cycles	50,000
Shore D hardness	ASTM D2240 / ISO 868	Shore D	D55
Continuous Service Temp.	Heat Aging Criteria	°C	260
Limiting Oxygen Index (LOI)	ASTM D2863 / ISO 4589	%	>95
Flammability Rating	UL 94	Rating	V-0
Dielectric Constant (1MHz)	ASTM D150 / IEC 250	—	2.03
Dissipation Factor(1MHz)	ASTM D150 / IEC 250	—	<0.0002
Dielectric Strength (0.25mm)	ASTM D149 / IEC 243	kV/mm	80
Volume Resistivity	ASTM D257 / ISO 1325	Ω·cm	10 ¹⁸
Water absorption	ASTM D570	%	<0.03



We believe the greatest engineering achievements are the ones you never have to think about. They are the components that endure the corrosive depths of manufacturing without a whisper of degradation. The flexible conduits that flex fifty thousand times without fatigue. The flawless dielectric shields that carry signal at the speed of thought.

Everflon™ PFA 410 isn't just another fluoroplastic pellet. It is quiet reliability. It is relentless endurance. It is the invisible backbone empowering your boldest industrial innovations.

Build without compromise. Endure with Everflon.

The Invisible Force Behind What's Next.

Precision at the molecular scale. Power at the industrial edge.

- Explore the future: www.everflon.com www.everflonultra.com
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