



# FEP - Fluorinated ethylene propylene

## Properties

### Background

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n The development of PTFE was a significant breakthrough in polymer sciences. The special processing requirements of PTFE led researchers to develop a melt-processable version of PTFE resulting in FEP. This new resin was compatible with existing processing methods and equipment. Melt processability also allowed for long continuous extrusions of FEP in applications such as wire and cable.



### Key Properties

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- n Excellent coefficient of friction
- n Chemically resistant and inertness
- n Gamma, ETO and autoclave sterilizable
- n Maximum working temperature 400°F (204°C)
- n Excellent transmission of UV rays
- n Lower gas and vapor permeability than PTFE
- n Low absorption of solvents (less than 1%)

### Additional Properties

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- n Radiation Resistance
- n Excellent dielectric insulating properties
- n Melt weldability and thermoformability
- n Biocompatibility - Certified USP Class VI
- n Environmental stability
- n Flame rating- UL 94VO
- n Limiting oxygen index- greater than 95

### YOZONE Capabilities

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- n Etching available for bonding
- n Fillers available for material modification
  - Radio opaque
  - Carbon
  - UV inhibitors
  - Pigments
- n Tight tolerance extrusions
- n Extruded forms
  - Tubing
    - Lay-flat tubing
    - Special profiles
    - Heat shrink
  - Monofilament
  - Multi-lumen





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### General properties FEP

	Property	Specification	Unit	Value
General	Continuous working temp.	Maximum	°C	205
	Chemical resistance		-	Excellent
	Specific gravity	D 792	g/cm <sup>3</sup>	2.15
Electrical	Dielectric constant	D 150 at 10 <sup>3</sup> Hz	-	2
		D 150 at 10 <sup>6</sup> Hz	-	2
	Dielectric dissipation factor	D 150 at 10 <sup>3</sup> Hz	-	0.0001
		D 150 at 10 <sup>6</sup> Hz	-	0.0008
	Dielectric strength	D 149	kV/mm	50
	Volume resistivity	D 257	Ohm·cm	>10 <sup>18</sup>
Mechanical	Tensile strength	D 1708, D 638	Mpa	30
	Elongation	D 1708, D 638	%	300
	Compressive strength	D 695	Mpa	15
	Impact strength	D 256 bij +23°C	J/m	No break
	Flexural Modulus	D 790 bij +23°C	Mpa	660
	Tensile Modulus	D 638	Mpa	350
	Hardness	D 2240	-	55-60
Thermal	Melting (gel)point		°C	270
	Thermal conductivity	+23°C	W/Kg.m	0.25
	HDT	DIN 75	°C	
	method A			59
	method B			57

Actual properties may change due to processing method, compound type, extruded dimensions and other variables. It is the user's responsibility to evaluate and fully test the suitability of the product for their specific application.