

PTFE and Fluoroplastic Material Properties Data Sheet

Comprehensive Technical Data for PTFE, PFA, FEP, PVDF and Other Fluoropolymers

Prepared by: [Your Company Name]

Date: [Insert Date]

Introduction

This technical data sheet provides comprehensive physical, mechanical, thermal, and electrical properties of fluoropolymer materials including PTFE (Polytetrafluoroethylene), PFA (Perfluoroalkoxy), FEP (Fluorinated Ethylene Propylene), PVDF (Polyvinylidene Fluoride), and other related fluoroplastics. These materials are widely used in chemical processing, semiconductor, pharmaceutical, food processing, and aerospace industries due to their exceptional chemical resistance, thermal stability, and low friction characteristics.

Material Properties Comparison

Property	PTFE	PFA	FEP	PVDF	PFA-HF	ETFE
Density (g/cm ³)	2.1-2.2	2.13-2.17	2.14-2.17	1.75-1.78	2.15-2.17	1.70-1.75
Melting Point (°C)	327	305-315	260-280	165-180	305-310	240-260
Operating Temp. Range (°C)	-200 to +260	-200 to +260	-85 to +205	-40 to +150	-55 to +150	-80 to +150
Tensile Strength (MPa)	20-40	20-28	20-35	35-55	25-30	35-50
Elongation at Break (%)	200-400	250-400	250-350	150-400	200-350	200-400
Dielectric Strength (kV/mm)	60-80	80-100	60-80	20-25	80-100	25-30
Coefficient of Friction	0.04-0.1	0.1-0.2	0.1-0.2	0.3-0.4	0.1-0.2	0.2-0.3
Water Absorption (%)	<0.01	<0.01	<0.01	0.04-0.1	<0.01	0.1-0.2
Chemical	Excellent	Excellent	Excellent	Good	Excellent	Good

Resistance						
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Key Characteristics

- Exceptional chemical resistance to acids, bases, and solvents
- Low coefficient of friction and non-stick properties
- Wide operating temperature range with excellent thermal stability
- Excellent dielectric properties and electrical insulation
- High purity suitable for semiconductor and pharmaceutical applications
- UV and radiation resistance (varies by material type)
- Low moisture absorption and excellent weatherability

Typical Applications

- Chemical processing equipment (valves, seals, gaskets)
- Semiconductor manufacturing (wafer handling, wet benches)
- Pharmaceutical and food processing (tubing, vessels, seals)
- Electrical insulation components
- Laboratory equipment and analytical instruments
- Aerospace and automotive applications

Notes

Values are typical and may vary based on specific grade, processing method, and manufacturer specifications. All materials comply with relevant international standards where applicable. For critical applications, please consult our engineering team for detailed specifications.

(内容由 AI 生成, 仅供参考)