Technical Data

Did You Know?

Fluoroplastic Polymers

Mechanical Properties of PTFE, FEP & PFA

Material	PTFE	FEP	PFA	Tefzel® ETFE
Polymer Name	*Polytetrafluoroethylene*	*Fluorinated Ethylene Propylene*	*Perfluoralkoxy*	*Etylene Tetrafluoroethylene*
Tensile Strength kp/cm^2	250	210	280	450
Elongation %	350	300	300	200
Flexural Modulus kp/cm^2	6800	6800	14000	14000
Hardness	D55	D55	D55	D75
Melting Point °c	327	279	305	270
Max. Service Temp °c	+260	+200	+260	+150
Low Service Temp°c	-200	-200	-200	-200
Non Flamability	Rated 94 VO	Rated 94 VO	Rated 94 VO	Rated 94 VO
Water Absorption 20°c, %	<0.01	<0.01	<0.01	<0.01
Weather Resistance	Excellent	Excellent	Excellent	Excellent
Density g/cm^3	2.1	2.1	2.2	1.7
Dielectric Constant 1MHZ	2.1	2.1	2.1	2.6
Dissipation Factor	0.0002	0.0002	0.0002	0.0008
Organic Solvents Resistance	Excellent	Excellent	Excellent	Excellent
Acid & Alkalies Resistance	Excellent	Excellent	Excellent	Excellent
Flexibility	Good	Good	Good	Good
Radiation Resistance, rad.	10^5	10^6	10^6	10^8
Specific Heat cal/g/°c	0.3	0.28	0.29	n/a
Thermal Conduct cal.sec.sq cm/°c/cm	$5x10^{-4}$	$5x10^{-4}$	$5x10^{-4}$	n/a
Coefficient of Linear Expansion cm/cm/°c	10^{-4}	$9x10^{-5}$	$14x10^{-5}$	$9x10^{-5}$
Coefficient of Friction (Dynamic to Steel)	0.1	0.2	0.2	0.3

Chemical Resistance of PTFE, FEP & PFA

These materials known as the noble plastics are some of the most inert materials known to man. They are unaffectedby virtually all chemicals, and certainly most chemicals in industrial use. The few chemicals that are known to have aneffect are: Sodium metal, potassium metal in liquid form, or as reactive complexes which are in effect liquid solutionsof these metals. Fluorine and related oxidising compounds such as chlorine trifluoride at elevated temperatures.

There is no known solvent for PTFE, FEP & PFA.

Important Note

The above data is intended as a guide and is taken from resin manufacturers' data. Flextech cannot take responsibility for the accuracy of the data, and customers must evaluate the material under the relevant conditions ifthe properties are critical to their applications.

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