

Overview of materials for Polytetrafluoroethylene (PTFE), Extruded

Category : Polymer , Thermoplastic , Fluoropolymer , PTFE , Polytetrafluoroethylene (PTFE), Extruded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polytetrafluoroethylene (PTFE), Extruded". Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polytetrafluoroethylene-PTFE-Extruded.php

Physical Properties	Metric	English	Comments
Density	2.00 - 2.30 g/cc	0.0723 - 0.0831 lb/in ³	Average value: 2.16 g/cc Grade Count:35
Apparent Bulk Density	0.450 - 0.510 g/cc	0.0163 - 0.0184 lb/in ³	Average value: 0.493 g/cc Grade Count:6
Water Absorption	0.000 - 0.0100 %	0.000 - 0.0100 %	Average value: 0.00933 % Grade Count:15
Particle Size	400 - 570 μm	400 - 570 μm	Average value: 501 μm Grade Count:15

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	58.0	58.0	Average value: 58.0 Grade Count:14
Hardness, Shore A	98.0	98.0	Average value: 98.0 Grade Count:14
Hardness, Shore D	50.0 - 67.0	50.0 - 67.0	Average value: 58.6 Grade Count:20
Tensile Strength, Ultimate	13.0 - 35.0 MPa	1890 - 5080 psi	Average value: 24.5 MPa Grade Count:32
Tensile Strength, Yield	20.0 - 196 MPa	2900 - 28400 psi	Average value: 131 MPa Grade Count:3
Elongation at Break	70.0 - 550 %	70.0 - 550 %	Average value: 312 % Grade Count:35
Modulus of Elasticity	0.390 - 0.750 GPa	56.6 - 109 ksi	Average value: 0.599 GPa Grade Count:3
Flexural Modulus	0.275 - 0.700 GPa	39.9 - 102 ksi	Average value: 0.504 GPa Grade Count:15
Compressive Yield Strength	2.00 - 24.1 MPa	290 - 3500 psi	Average value: 7.31 MPa Grade Count:10
Poissons Ratio	0.460	0.460	Average value: 0.460 Grade Count:14
Izod Impact, Notched	1.87 - 1.89 J/cm	3.50 - 3.54 ft-lb/in	Average value: 1.89 J/cm Grade Count:14

Coefficient of Friction Mechanical Properties	0.0200 - 0.200 Metric	0.0200 - 0.200 English	Average value: 0.0981 Grade Count:14
Coefficient of Friction, Static	0.0500 - 0.0800	0.0500 - 0.0800	Average value: 0.0650 Grade Count:14
K (wear) Factor	10.0 - 5040 x 10 ⁻⁸ mm ³ /N-M	4.96 - 2500 x 10 ⁻¹⁰ in ³ - min/ft-lb-hr	Average value: 4080 x 10 ^{<sup>-8</sup>}
Limiting Pressure Velocity	0.0420 - 0.0876 MPa- m/sec	1200 - 2500 psi-ft/min	Average value: 0.0642 MPa-m/sec Grade Count:14
Taber Abrasion, mg/1000 Cycles	8.90	8.90	Average value: 8.90 Grade Count:14

Thermal Properties	Metric	English	Comments
CTE, linear	75.0 - 790 μm/m-°C	41.7 - 439 μin/in-°F	Average value: 294 μm/m-°C Grade Count:20
Specific Heat Capacity	1.50 J/g-°C	0.359 BTU/lb-°F	Average value: 1.50 J/g-°C Grade Count:14
	1.20 - 1.40 J/g-°C @Temperature 40.0 - 260 °C	0.287 - 0.335 BTU/lb-°F @Temperature 104 - 500 °F	Average value: 1.30 J/g-°C Grade Count:14
Thermal Conductivity	0.167 - 0.300 W/m-K	1.16 - 2.08 BTU-in/hr- ft ² -°F	Average value: 0.292 W/m-K Grade Count:16
Melting Point	321 - 342 °C	610 - 648 °F	Average value: 327 °C Grade Count:16
Maximum Service Temperature, Air	260 - 300 °C	500 - 572 °F	Average value: 261 °C Grade Count:27
Minimum Service Temperature, Air	-270 - -79.0 °C	-454 - -110 °F	Average value: -183 °C Grade Count:26
Flammability, UL94	V-0	V-0	Grade Count:15
Oxygen Index	95.0 %	95.0 %	Average value: 95.0 % Grade Count:15

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 1.00e+19 ohm-cm	1.00e+14 - 1.00e+19 ohm-cm	Average value: 8.32e+17 ohm-cm Grade Count:22
Surface Resistance	1.00e+15 - 1.00e+18 ohm	1.00e+15 - 1.00e+18 ohm	Average value: 6.80e+17 ohm Grade Count:20
Dielectric Constant	2.00 - 2.10	2.00 - 2.10	Average value: 2.09 Grade Count:16
Dielectric Strength	7.44 - 60.0 kV/mm	189 - 1520 kV/in	Average value: 24.6 kV/mm Grade Count:21
Dissipation Factor	0.000100 - 0.000200	0.000100 - 0.000200	Average value: 0.000113 Grade Count:14
	300 sec	300 sec	Average value: 300 sec Grade

Arc Resistance Electrical Properties	Metric	English	Count:13 Comments
Processing Properties	Metric	English	Comments
Processing Temperature	379 - 429 °C	714 - 804 °F	Average value: 404 °C Grade Count:13

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