

## Overview of materials for Polytetrafluoroethylene (PTFE), Glass Filled, Molded

Category : Polymer , Thermoplastic , Fluoropolymer , PTFE , Polytetrafluoroethylene (PTFE), Glass Filled, Molded

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polytetrafluoroethylene (PTFE), Glass Filled, Molded". 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-Glass-Filled-Molded.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polytetrafluoroethylene-PTFE-Glass-Filled-Molded.php)

Physical Properties	Metric	English	Comments
Density	1.40 - 3.10 g/cc	0.0506 - 0.112 lb/in <sup>3</sup>	Average value: 2.24 g/cc Grade Count:75
Apparent Bulk Density	0.500 - 0.820 g/cc	0.0181 - 0.0296 lb/in <sup>3</sup>	Average value: 0.663 g/cc Grade Count:6
Water Absorption	0.000 - 0.100 %	0.000 - 0.100 %	Average value: 0.0379 % Grade Count:19
Moisture Absorption at Equilibrium	0.0200 - 0.220 %	0.0200 - 0.220 %	Average value: 0.0720 % Grade Count:5
	0.0100 - 0.0500 % @Temperature 50.0 - 50.0 °C	0.0100 - 0.0500 % @Temperature 122 - 122 °F	Average value: 0.0300 % Grade Count:2
	0.0100 - 0.0500 % @Time 173000 - 173000 sec	0.0100 - 0.0500 % @Time 48.0 - 48.0 hour	Average value: 0.0300 % Grade Count:2
Particle Size	25.0 - 800 µm	25.0 - 800 µm	Average value: 535 µm Grade Count:14
Viscosity	1.00e+13 - 1.00e+15 cP @Temperature 340 - 380 °C	1.00e+13 - 1.00e+15 cP @Temperature 644 - 716 °F	Average value: 5.05e+14 cP Grade Count:10
Permeability	0.0150	0.0150	Average value: 0.0150 Grade Count:4
Thickness	70.0 - 3180 microns	2.76 - 125 mil	Average value: 821 microns Grade Count:17
Linear Mold Shrinkage	0.0160 - 0.0500 cm/cm	0.0160 - 0.0500 in/in	Average value: 0.0300 cm/cm Grade Count:15

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	50.0 - 68.0	50.0 - 68.0	Average value: 60.0 Grade Count:49
Ball Indentation Hardness	29.0 - 60.0 MPa	4210 - 8700 psi	Average value: 42.4 MPa Grade

Mechanical Properties	Metric	English	Count:11 Comments
Tensile Strength, Ultimate	6.89 - 50.0 MPa	1000 - 7250 psi	Average value: 20.3 MPa Grade Count:68
	18.0 - 34.0 MPa @Temperature 100 - 100 °C	2610 - 4930 psi @Temperature 212 - 212 °F	Average value: 26.5 MPa Grade Count:2
Tensile Strength, Yield	16.0 - 23.5 MPa	2320 - 3410 psi	Average value: 19.2 MPa Grade Count:6
Elongation at Break	4.00 - 450 %	4.00 - 450 %	Average value: 226 % Grade Count:70
	5.80 - 8.70 % @Temperature 100 - 100 °C	5.80 - 8.70 % @Temperature 212 - 212 °F	Average value: 7.57 % Grade Count:2
Modulus of Elasticity	0.0931 - 4.32 GPa	13.5 - 627 ksi	Average value: 1.36 GPa Grade Count:26
	0.379212 - 0.489528 GPa @Temperature 100 - 100 °C	55.0009 - 71.0011 ksi @Temperature 212 - 212 °F	Average value: 0.438 GPa Grade Count:2
Flexural Yield Strength	5.50 - 38.0 MPa	798 - 5510 psi	Average value: 20.6 MPa Grade Count:8
Flexural Modulus	0.490 - 4.36 GPa	71.1 - 633 ksi	Average value: 1.26 GPa Grade Count:14
Compressive Yield Strength	0.785 - 54.0 MPa	114 - 7830 psi	Average value: 16.0 MPa Grade Count:34
	1.80 - 43.0 MPa @Temperature 100 - 150 °C	261 - 6240 psi @Temperature 212 - 302 °F	Average value: 21.8 MPa Grade Count:4
	1.80 - 43.0 MPa @Strain 0.200 - 17.6 %	261 - 6240 psi @Strain 0.200 - 17.6 %	Average value: 21.8 MPa Grade Count:4
Compressive Modulus	0.430 - 2.14 GPa	62.4 - 311 ksi	Average value: 0.939 GPa Grade Count:8
	0.500 - 0.860 GPa @Temperature 100 - 100 °C	72.5 - 125 ksi @Temperature 212 - 212 °F	Average value: 0.622 GPa Grade Count:2
Shear Strength	14.479 - 19.9948 MPa	2100.0 - 2900.00 psi	Average value: 17.4 MPa Grade Count:1
	@Temperature 26.7 - 149 °C	@Temperature 80.0 - 300 °F	
Izod Impact, Notched	1.10 - 1.37 J/cm	2.06 - 2.57 ft-lb/in	Average value: 1.24 J/cm Grade Count:4

Impact Unnotched Mechanical Properties	1.60 J/cm Metric	3.00 ft-lb/in English	Average value: 1.60 J/cm Grade Count:10
Coefficient of Friction	0.0600 - 0.360	0.0600 - 0.360	Average value: 0.160 Grade Count:32
Coefficient of Friction, Static	0.0200 - 0.270	0.0200 - 0.270	Average value: 0.0933 Grade Count:26
Tear Strength	12.0 - 71.0 kN/m	68.5 - 405 pli	Average value: 33.9 kN/m Grade Count:5
Peel Strength	0.701 - 5.47 kN/m	4.00 - 31.2 pli	Average value: 2.39 kN/m Grade Count:11
	1.38487 - 1.84065 kN/m  @Temperature 288 - 288 °C	7.90207 - 10.5027 pli  @Temperature 550 - 550 °F	Average value: 1.67 kN/m Grade Count:3
	1.38487 - 1.84065 kN/m  @Time 10.0 - 20.0 sec	7.90207 - 10.5027 pli  @Time 0.00278 - 0.00556 hour	Average value: 1.67 kN/m Grade Count:3
K (wear) Factor	10.0 - 142 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	4.96 - 70.6 x 10 <sup>-10</sup> in <sup>3</sup> - min/ft-lb-hr	Average value: 39.6 x 10 <sup>&lt;sup&gt;- 8&lt;/sup&gt;</sup> mm <sup>3</sup> /N-M Grade Count:8

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 - 237 µm/m-°C	6.11 - 132 µin/in-°F	Average value: 74.8 µm/m-°C Grade Count:41
	50.0 - 171 µm/m-°C  @Temperature 25.6 - 300 °C	27.8 - 95.0 µin/in-°F  @Temperature 78.0 - 572 °F	Average value: 110 µm/m-°C Grade Count:11
CTE, linear, Transverse to Flow	99.1 - 99.1 µm/m-°C  @Temperature 26.0 - 200 °C	55.1 - 55.1 µin/in-°F  @Temperature 78.8 - 392 °F	Average value: 99.1 µm/m-°C Grade Count:1
Specific Heat Capacity	0.790 - 1.00 J/g-°C	0.189 - 0.239 BTU/lb-°F	Average value: 0.910 J/g-°C Grade Count:12
Thermal Conductivity	0.220 - 0.558 W/m-K	1.53 - 3.87 BTU-in/hr- ft <sup>2</sup> -°F	Average value: 0.338 W/m-K Grade Count:28
	0.200 - 1.44 W/m-K  @Temperature 80.0 - 250 °C	1.39 - 9.99 BTU-in/hr- ft <sup>2</sup> -°F  @Temperature 176 - 482 °F	Average value: 0.480 W/m-K Grade Count:18
Melting Point	327 °C	621 °F	Average value: 327 °C Grade Count:24
Maximum Service Temperature, Air	230 - 316 °C	446 - 601 °F	Average value: 263 °C Grade Count:42
Minimum Service Temperature, Air	-268 - -20.0 °C	-450 - -4.00 °F	Average value: -171 °C Grade Count:29

Thermal Properties	Metric	English	Comments
Electrical Properties	Metric	English	Comments
Electrical Resistivity	10000 - 1.00e+18 ohm-cm	10000 - 1.00e+18 ohm-cm	Average value: 1.87e+17 ohm-cm Grade Count:44
Surface Resistance	1000 - 1.00e+16 ohm	1000 - 1.00e+16 ohm	Average value: 1.30e+15 ohm Grade Count:33
Dielectric Constant	1.92 - 11.2	1.92 - 11.2	Average value: 3.94 Grade Count:28
Dielectric Strength	3.00 - 37.0 kV/mm	76.2 - 940 kV/in	Average value: 18.3 kV/mm Grade Count:24
	11.8504 - 12.5197 kV/mm @Temperature 121 - 121 °C	300.999 - 317.999 kV/in @Temperature 250 - 250 °F	Average value: 12.2 kV/mm Grade Count:2
	11.8504 - 12.5197 kV/mm @Time 10800 - 10800 sec	300.999 - 317.999 kV/in @Time 3.00 - 3.00 hour	Average value: 12.2 kV/mm Grade Count:2
Dissipation Factor	0.0000100 - 0.420	0.0000100 - 0.420	Average value: 0.0225 Grade Count:26

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