

Overview of materials for Polytetrafluoroethylene (PTFE), Mica Filled

Category : Polymer , Thermoplastic , Fluoropolymer , PTFE , Polytetrafluoroethylene (PTFE), Mica Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polytetrafluoroethylene (PTFE), Mica Filled". 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-Mica-Filled.php

Physical Properties	Metric	English	Comments
Density	2.24 - 2.33 g/cc	0.0809 - 0.0842 lb/in ³	Average value: 2.29 g/cc Grade Count:9
Water Absorption	0.0300 - 0.100 %	0.0300 - 0.100 %	Average value: 0.0650 % Grade Count:4
Moisture Absorption at Equilibrium	0.100 %	0.100 %	Average value: 0.100 % Grade Count:3
Water Absorption at Saturation	0.200 - 2.50 %	0.200 - 2.50 %	Average value: 1.10 % Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	50.0 - 55.0	50.0 - 55.0	Average value: 52.0 Grade Count:5
Hardness, Shore D	60.0 - 70.0	60.0 - 70.0	Average value: 64.1 Grade Count:8
Ball Indentation Hardness	40.0 - 135 MPa	5800 - 19600 psi	Average value: 75.0 MPa Grade Count:5
Tensile Strength, Ultimate	7.00 - 23.0 MPa	1020 - 3340 psi	Average value: 10.5 MPa Grade Count:8
Elongation at Break	6.50 - 300 %	6.50 - 300 %	Average value: 86.6 % Grade Count:9
Elongation at Yield	4.00 - 5.00 %	4.00 - 5.00 %	Average value: 4.33 % Grade Count:3
Modulus of Elasticity	1.45 - 2.07 GPa	210 - 300 ksi	Average value: 1.69 GPa Grade Count:5
Flexural Yield Strength	13.0 - 15.2 MPa	1890 - 2200 psi	Average value: 14.0 MPa Grade Count:5
Compressive Yield Strength	10.5 - 27.6 MPa	1520 - 4000 psi	Average value: 18.3 MPa Grade Count:5
Charpy Impact Unnotched	0.800 - 3.00 J/cm ²	3.81 - 14.3 ft-lb/in ²	Average value: 2.27 J/cm ² Grade Count:3
Charpy Impact, Notched	0.450 - 0.750 J/cm ²	2.14 - 3.57 ft-lb/in ²	Average value: 0.650 J/cm ² Grade Count:3
Coefficient of Friction	0.0300 - 0.300	0.0300 - 0.300	Average value: 0.175 Grade Count:8

Mechanical Properties	Metric	English	Comments
Coefficient of Friction, Static	0.0800 - 0.320	0.0800 - 0.320	Average value: 0.192 Grade Count:4
K (wear) Factor	4.03 - 1210 x 10 ⁻⁸ mm ³ /N-M	2.00 - 600 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Average value: 461 x 10 ^{<sup>-8</sup>} mm ³ /N-M Grade Count:3
Limiting Pressure Velocity	0.250 - 0.400 MPa-m/sec	7140 - 11400 psi-ft/min	Average value: 0.310 MPa-m/sec Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	45.0 - 103 µm/m-°C	25.0 - 57.0 µin/in-°F	Average value: 73.5 µm/m-°C Grade Count:5
Thermal Conductivity	0.440 - 0.770 W/m-K	3.05 - 5.34 BTU-in/hr-ft ² -°F	Average value: 0.683 W/m-K Grade Count:4
Melting Point	327 - 327 °C	621 - 621 °F	Average value: 327 °C Grade Count:7
Maximum Service Temperature, Air	260 °C	500 °F	Average value: 260 °C Grade Count:8
Deflection Temperature at 1.8 MPa (264 psi)	98.9 - 132 °C	210 - 270 °F	Average value: 112 °C Grade Count:5
Minimum Service Temperature, Air	-200 - -50.0 °C	-328 - -58.0 °F	Average value: -117 °C Grade Count:3
Flammability, UL94	V-0	V-0	Grade Count:7
Oxygen Index	95.0 %	95.0 %	Average value: 95.0 % Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+10 - 1.00e+15 ohm-cm	1.00e+10 - 1.00e+15 ohm-cm	Average value: 1.70e+14 ohm-cm Grade Count:6
Surface Resistance	1.00e+10 - 1.00e+13 ohm	1.00e+10 - 1.00e+13 ohm	Average value: 5.81e+12 ohm Grade Count:7
Dielectric Constant	2.58 - 2.85	2.58 - 2.85	Average value: 2.72 Grade Count:4
Dielectric Strength	7.00 - 25.0 kV/mm	178 - 635 kV/in	Average value: 11.2 kV/mm Grade Count:7

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