

Overview of materials for Polyphenylene Sulfide (PPS), Unreinforced, Extruded

Category : Polymer , Thermoplastic , Polyphenylene Sulfide (PPS) , Polyphenylene Sulfide (PPS), Unreinforced, Extruded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyphenylene Sulfide (PPS), Unreinforced, 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-Polyphenylene-Sulfide-PPS-Unreinforced-Extruded.php

Physical Properties	Metric	English	Comments
Density	1.34 - 1.65 g/cc	0.0484 - 0.0596 lb/in ³	Average value: 1.40 g/cc Grade Count:18
Water Absorption	0.0100 - 0.0500 %	0.0100 - 0.0500 %	Average value: 0.0386 % Grade Count:7
Water Absorption at Saturation	0.0100 - 0.200 %	0.0100 - 0.200 %	Average value: 0.0575 % Grade Count:12
Linear Mold Shrinkage	0.00300 - 0.00900 cm/cm	0.00300 - 0.00900 in/in	Average value: 0.00600 cm/cm Grade Count:3
Melt Flow	45.0 - 170 g/10 min	45.0 - 170 g/10 min	Average value: 105 g/10 min Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	82.0 - 100	82.0 - 100	Average value: 90.2 Grade Count:5
Hardness, Shore D	82.0 - 85.0	82.0 - 85.0	Average value: 83.7 Grade Count:3
Ball Indentation Hardness	160 - 205 MPa	23200 - 29700 psi	Average value: 185 MPa Grade Count:3
Tensile Strength, Ultimate	50.0 - 359 MPa	7250 - 52000 psi	Average value: 104 MPa Grade Count:18
Elongation at Break	2.00 - 40.0 %	2.00 - 40.0 %	Average value: 13.9 % Grade Count:19
Elongation at Yield	0.500 - 10.0 %	0.500 - 10.0 %	Average value: 4.32 % Grade Count:8
Modulus of Elasticity	3.20 - 14.0 GPa	464 - 2030 ksi	Average value: 5.74 GPa Grade Count:13
Flexural Yield Strength	72.0 - 155 MPa	10400 - 22500 psi	Average value: 114 MPa Grade Count:12
Flexural Modulus	3.20 - 12.0 GPa	464 - 1740 ksi	Average value: 5.51 GPa Grade Count:12
Compressive Yield Strength	33.0 - 148 MPa	4790 - 21500 psi	Average value: 87.0 MPa Grade Count:4

Mechanical Properties	Metric 2.51 J/cm	English 4.70 ft-lb/in	Comments Average value: 0.928 J/cm Grade Count:5
Izod Impact, Notched (ISO)	2.00 - 4.00 kJ/m ²	0.952 - 1.90 ft-lb/in ²	Average value: 3.38 kJ/m ² Grade Count:4
Charpy Impact Unnotched	0.400 - 1000 J/cm ²	1.90 - 4760 ft-lb/in ²	Average value: 0.975 J/cm ² Grade Count:5
Charpy Impact, Notched	0.200 - 1000 J/cm ²	0.952 - 4760 ft-lb/in ²	Average value: 0.300 J/cm ² Grade Count:3
Coefficient of Friction	0.200 - 0.600	0.200 - 0.600	Average value: 0.344 Grade Count:4
Limiting Pressure Velocity	0.105 - 0.430 MPa-m/sec	3000 - 12300 psi-ft/min	Average value: 0.278 MPa-m/sec Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 - 60.0 μm/m-°C	27.8 - 33.3 μin/in-°F	Average value: 51.8 μm/m-°C Grade Count:11
	120 - 120 μm/m-°C @Temperature 100 - 200 °C	66.7 - 66.7 μin/in-°F @Temperature 212 - 392 °F	Average value: 120 μm/m-°C Grade Count:2
Thermal Conductivity	0.288 - 22.0 W/m-K	2.00 - 153 BTU-in/hr-ft ² -°F	Average value: 5.71 W/m-K Grade Count:10
Melting Point	280 - 285 °C	536 - 545 °F	Average value: 282 °C Grade Count:13
Maximum Service Temperature, Air	200 - 260 °C	392 - 500 °F	Average value: 227 °C Grade Count:9
Deflection Temperature at 1.8 MPa (264 psi)	95.0 - 260 °C	203 - 500 °F	Average value: 119 °C Grade Count:15
Glass Transition Temp, Tg	88.0 - 90.0 °C	190 - 194 °F	Average value: 89.6 °C Grade Count:5
Flammability, UL94	V-0	V-0	Grade Count:9
Oxygen Index	44.0 %	44.0 %	Average value: 44.0 % Grade Count:4

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 4.50e+16 ohm-cm	1.00e+14 - 4.50e+16 ohm-cm	Average value: 8.94e+15 ohm-cm Grade Count:12
Surface Resistance	1000 - 1.00e+16 ohm	1000 - 1.00e+16 ohm	Average value: 2.82e+15 ohm Grade Count:11
Insulation Resistance	1000 - 10000 ohm	1000 - 10000 ohm	Average value: 4000 ohm Grade Count:3
Dielectric Constant	2.70 - 3.30	2.70 - 3.30	Average value: 3.14 Grade Count:11
Dielectric Strength	18.0 - 24.0 kV/mm	457 - 610 kV/in	Average value: 22.5 kV/mm Grade Count:11

Electrical Properties	Metric ⁰ - 0.00300	English ¹ - 0.00300	Comments Average value: 0.00203 Grade Count:3
Comparative Tracking Index	100 - 125 V	100 - 125 V	Average value: 117 V Grade Count:3

Processing Properties	Metric	English	Comments
Processing Temperature	330 °C	626 °F	Average value: 330 °C Grade Count:3
Nozzle Temperature	320 - 340 °C	608 - 644 °F	Average value: 330 °C Grade Count:3
Melt Temperature	290 - 340 °C	554 - 644 °F	Average value: 317 °C Grade Count:6
Mold Temperature	150 - 180 °C	302 - 356 °F	Average value: 165 °C Grade Count:3
Drying Temperature	50.0 - 140 °C	122 - 284 °F	Average value: 102 °C Grade Count:5

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