

Overview of materials for Polyphthalamide (PPA), 20% Glass Fiber Reinforced

Category : Polymer , Thermoplastic , Polyphthalamide (PPA) , Polyphthalamide (PPA), 20% Glass Fiber Reinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyphthalamide, 20% Glass Fiber Reinforced". Specific grades with glass content between 15% and 24% are included. 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-Polyphthalamide-PPA-20-Glass-Fiber-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.20 - 1.64 g/cc	0.0434 - 0.0592 lb/in ³	Average value: 1.38 g/cc Grade Count:36
Filler Content	15.0 - 23.0 %	15.0 - 23.0 %	Average value: 18.4 % Grade Count:21
Water Absorption	0.160 - 0.300 %	0.160 - 0.300 %	Average value: 0.233 % Grade Count:17
Linear Mold Shrinkage	0.00200 - 0.0110 cm/cm	0.00200 - 0.0110 in/in	Average value: 0.00518 cm/cm Grade Count:34
Linear Mold Shrinkage, Transverse	0.00600 - 0.0160 cm/cm	0.00600 - 0.0160 in/in	Average value: 0.00843 cm/cm Grade Count:14

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	124 - 127	124 - 127	Average value: 125 Grade Count:9
Tensile Strength, Ultimate	9.25 - 200 MPa	1340 - 29000 psi	Average value: 101 MPa Grade Count:35
	55.0 - 105 MPa	7980 - 15200 psi	Average value: 59.8 MPa Grade Count:3
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
	4.06 - 158.39 MPa	589 - 22973 psi	Average value: 59.8 MPa Grade Count:1
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	4.06 - 158.39 MPa	589 - 22973 psi	Average value: 59.8 MPa Grade Count:1
	@Strain 0.100 - 5.00 %	@Strain 0.100 - 5.00 %	
Elongation at Break	1.00 - 6.00 %	1.00 - 6.00 %	Average value: 2.28 % Grade Count:36
	2.00 - 12.0 %	2.00 - 12.0 %	Average value: 5.48 % Grade Count:3
	@Temperature 60.0 -	@Temperature 140 -	

Mechanical Properties	150 °C Metric	302 °F English	Comments
Elongation at Yield	3.50 - 10.0 % @Temperature 120 - 150 °C	3.50 - 10.0 % @Temperature 248 - 302 °F	Average value: 6.75 % Grade Count:1
Modulus of Elasticity	4.14 - 15.4 GPa	600 - 2230 ksi	Average value: 7.89 GPa Grade Count:34
	2.00 - 6.80 GPa @Temperature 60.0 - 150 °C	290 - 986 ksi @Temperature 140 - 302 °F	Average value: 4.78 GPa Grade Count:3
Flexural Yield Strength	110 - 226 MPa	16000 - 32800 psi	Average value: 173 MPa Grade Count:28
	66.9 - 141 MPa @Temperature 100 - 100 °C	9700 - 20500 psi @Temperature 212 - 212 °F	Average value: 104 MPa Grade Count:2
Flexural Modulus	3.45 - 9.65 GPa	500 - 1400 ksi	Average value: 6.85 GPa Grade Count:31
	2.34 - 4.96 GPa @Temperature 100 - 100 °C	339 - 719 ksi @Temperature 212 - 212 °F	Average value: 3.65 GPa Grade Count:2
Compressive Yield Strength	100 - 207 MPa	14500 - 30000 psi	Average value: 155 MPa Grade Count:4
Shear Strength	44.1 - 88.0 MPa	6400 - 12800 psi	Average value: 67.4 MPa Grade Count:6
Izod Impact, Notched	0.180 - 2.14 J/cm	0.337 - 4.00 ft-lb/in	Average value: 0.563 J/cm Grade Count:25
Izod Impact, Unnotched	2.67 - 9.60 J/cm	5.00 - 18.0 ft-lb/in	Average value: 4.99 J/cm Grade Count:18
Izod Impact, Notched (ISO)	2.50 - 12.0 kJ/m ²	1.19 - 5.71 ft-lb/in ²	Average value: 6.75 kJ/m ² Grade Count:6
	5.00 - 6.00 kJ/m ² @Temperature -40.0 - - 30.0 °C	2.38 - 2.86 ft-lb/in ² @Temperature -40.0 - - 22.0 °F	Average value: 5.67 kJ/m ² Grade Count:3
Charpy Impact Unnotched	2.00 - 8.60 J/cm ²	9.52 - 40.9 ft-lb/in ²	Average value: 4.54 J/cm ² Grade Count:12
	1.70 - 4.00 J/cm ² @Temperature -30.0 - - 20.0 °C	8.09 - 19.0 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 2.78 J/cm ² Grade Count:4
Charpy Impact, Notched	0.350 - 1.10 J/cm ²	1.67 - 5.24 ft-lb/in ²	Average value: 0.636 J/cm ² Grade Count:12
	0.400 - 0.600 J/cm ²	1.90 - 2.86 ft-lb/in ²	Average value: 0.529 J/cm ² Grade

Mechanical Properties	Metric	English	Count:6 Comments
	@ Temperature -40.0 - -20.0 °C	@ Temperature -40.0 - -4.00 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	22.0 - 500 µm/m-°C	12.2 - 278 µin/in-°F	Average value: 83.0 µm/m-°C Grade Count:13
	11.0 - 500 µm/m-°C	6.11 - 278 µin/in-°F	Average value: 122 µm/m-°C Grade Count:8
	@ Temperature 55.0 - 250 °C	@ Temperature 131 - 482 °F	
CTE, linear, Transverse to Flow	30.0 - 96.0 µm/m-°C	16.7 - 53.3 µin/in-°F	Average value: 70.1 µm/m-°C Grade Count:11
	77.0 - 160 µm/m-°C	42.8 - 88.9 µin/in-°F	Average value: 121 µm/m-°C Grade Count:8
	@ Temperature 55.0 - 250 °C	@ Temperature 131 - 482 °F	
Melting Point	300 - 324 °C	572 - 615 °F	Average value: 309 °C Grade Count:15
Deflection Temperature at 0.46 MPa (66 psi)	220 - 318 °C	428 - 604 °F	Average value: 284 °C Grade Count:15
Deflection Temperature at 1.8 MPa (264 psi)	188 - 277 °C	370 - 531 °F	Average value: 250 °C Grade Count:29
Vicat Softening Point	215 - 275 °C	419 - 527 °F	Average value: 246 °C Grade Count:5
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:23
Oxygen Index	23.0 - 35.0 %	23.0 - 35.0 %	Average value: 27.2 % Grade Count:5

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+16 ohm-cm	1000 - 1.00e+16 ohm-cm	Average value: 1.81e+15 ohm-cm Grade Count:19
Surface Resistance	1000 - 1.00e+15 ohm	1000 - 1.00e+15 ohm	Average value: 4.02e+14 ohm Grade Count:5
Dielectric Constant	3.90 - 5.20	3.90 - 5.20	Average value: 4.37 Grade Count:5
Dielectric Strength	16.5 - 42.0 kV/mm	419 - 1070 kV/in	Average value: 22.9 kV/mm Grade Count:6
Dissipation Factor	0.00600 - 0.0230	0.00600 - 0.0230	Average value: 0.0154 Grade Count:5
Comparative Tracking Index	550 - 600 V	550 - 600 V	Average value: 575 V Grade Count:8

Processing Properties	Metric	English	Comments
Processing Temperature	296 - 340 °C	565 - 644 °F	Average value: 319 °C Grade Count:6
Melt Temperature	240 - 343 °C	464 - 650 °F	Average value: 323 °C Grade Count:30

Processing Properties	Metric180 °C	English35 °F	Comments
Drying Temperature	90.0 - 130 °C	194 - 266 °F	Average value: 127 °C Grade Count:34
Moisture Content	0.0300 - 0.200 %	0.0300 - 0.200 %	Average value: 0.0767 % Grade Count:23
Dew Point	-31.7 - -28.9 °C	-25.0 - -20.0 °F	Average value: -30.4 °C Grade Count:9
Injection Pressure	68.9 - 124 MPa	10000 - 18000 psi	Average value: 92.1 MPa Grade Count:14

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