

## Overview of materials for Polyphthalamide (PPA), Aramid Fiber

Category : Polymer , Thermoplastic , Polyphthalamide (PPA) , Polyphthalamide (PPA), Aramid Fiber Filled

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyphthalamide, Aramid Fiber". 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-Aramid-Fiber.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polyphthalamide-PPA-Aramid-Fiber.php)

Physical Properties	Metric	English	Comments
Density	1.21 - 1.38 g/cc	0.0437 - 0.0499 lb/in <sup>3</sup>	Average value: 1.29 g/cc Grade Count:21
Filler Content	15.0 - 30.0 %	15.0 - 30.0 %	Average value: 20.0 % Grade Count:4
Water Absorption	0.200 - 0.350 %	0.200 - 0.350 %	Average value: 0.265 % Grade Count:11
Linear Mold Shrinkage	0.000300 - 0.0200 cm/cm	0.000300 - 0.0200 in/in	Average value: 0.00890 cm/cm Grade Count:21

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120 - 125	120 - 125	Average value: 123 Grade Count:4
Tensile Strength, Ultimate	51.7 - 241 MPa	7500 - 35000 psi	Average value: 94.5 MPa Grade Count:21
Elongation at Break	1.00 - 3.50 %	1.00 - 3.50 %	Average value: 2.14 % Grade Count:18
Elongation at Yield	2.00 - 3.80 %	2.00 - 3.80 %	Average value: 2.53 % Grade Count:3
Modulus of Elasticity	3.50 - 24.1 GPa	508 - 3500 ksi	Average value: 7.16 GPa Grade Count:21
Flexural Yield Strength	89.6 - 359 MPa	13000 - 52000 psi	Average value: 152 MPa Grade Count:20
Flexural Modulus	3.40 - 22.8 GPa	493 - 3300 ksi	Average value: 6.30 GPa Grade Count:20
Izod Impact, Notched	0.160 - 0.801 J/cm	0.300 - 1.50 ft-lb/in	Average value: 0.349 J/cm Grade Count:17
Izod Impact, Unnotched	2.14 - 7.47 J/cm	4.00 - 14.0 ft-lb/in	Average value: 3.36 J/cm Grade Count:17
Charpy Impact Unnotched	1.00 - 1.90 J/cm <sup>2</sup>	4.76 - 9.04 ft-lb/in <sup>2</sup>	Average value: 1.48 J/cm <sup>2</sup> Grade Count:4
	1.20 - 1.20 J/cm <sup>2</sup>	5.71 - 5.71 ft-lb/in <sup>2</sup>	Average value: 1.20 J/cm <sup>2</sup> Grade

Mechanical Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	165 - 195 °C	329 - 383 °F	Average value: 180 °C Grade Count:3
Deflection Temperature at 1.8 MPa (264 psi)	135 - 282 °C	275 - 540 °F	Average value: 220 °C Grade Count:11
Flammability, UL94	HB	HB	Grade Count:11

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+16 ohm-cm	1000 - 1.00e+16 ohm-cm	Average value: 2.18e+15 ohm-cm Grade Count:12
Insulation Resistance	1.00e+12 ohm	1.00e+12 ohm	Average value: 1.00e+12 ohm Grade Count:3

Processing Properties	Metric	English	Comments
Processing Temperature	296 - 338 °C	565 - 640 °F	Average value: 316 °C Grade Count:15
Nozzle Temperature	320 - 330 °C	608 - 626 °F	Average value: 325 °C Grade Count:3
Melt Temperature	302 - 350 °C	575 - 662 °F	Average value: 327 °C Grade Count:9
Mold Temperature	65.6 - 163 °C	150 - 325 °F	Average value: 145 °C Grade Count:21
Drying Temperature	80.0 - 130 °C	176 - 266 °F	Average value: 101 °C Grade Count:9
Moisture Content	0.0500 %	0.0500 %	Average value: 0.0500 % Grade Count:5
Dew Point	-31.7 °C	-25.0 °F	Average value: -31.7 °C Grade Count:5
Injection Pressure	68.9 - 124 MPa	10000 - 18000 psi	Average value: 95.3 MPa Grade Count:17

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