

## Overview of materials for Nylon 610

Category : Polymer , Thermoplastic , Nylon , Nylon 610

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 610". 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-Nylon-610.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-610.php)

Physical Properties	Metric	English	Comments
Density	1.03 - 3.80 g/cc	0.0372 - 0.137 lb/in <sup>3</sup>	Average value: 1.30 g/cc Grade Count:215
Filler Content	10.0 - 50.0 %	10.0 - 50.0 %	Average value: 28.6 % Grade Count:52
Water Absorption	0.0900 - 4.00 %	0.0900 - 4.00 %	Average value: 1.21 % Grade Count:92
	0.900 - 1.50 % @Temperature 70.0 - 70.0 °C	0.900 - 1.50 % @Temperature 158 - 158 °F	Average value: 1.23 % Grade Count:8
Moisture Absorption at Equilibrium	0.0900 - 4.80 %	0.0900 - 4.80 %	Average value: 0.630 % Grade Count:71
Water Absorption at Saturation	0.400 - 1.20 % @Temperature 45.0 - 400 °C	0.400 - 1.20 % @Temperature 113 - 752 °F	Average value: 0.814 % Grade Count:2
	0.400 - 1.20 % @Treatment Temp. 70.0 - 70.0 °C	0.400 - 1.20 % @Treatment Temp. 158 - 158 °F	Average value: 0.814 % Grade Count:2
Viscosity	360000 - 360000 cP @Temperature 250 - 250 °C	360000 - 360000 cP @Temperature 482 - 482 °F	Average value: 221000 cP Grade Count:1
	700 - 527068 cP @Temperature 230 - 280 °C	700 - 527068 cP @Temperature 446 - 536 °F	Average value: 221000 cP Grade Count:3
	700 - 527068 cP @Shear Rate 10.0 - 5000 1/s	700 - 527068 cP @Shear Rate 10.0 - 5000 1/s	Average value: 221000 cP Grade Count:3
Viscosity Test	150 - 170 cm <sup>3</sup> /g	150 - 170 cm <sup>3</sup> /g	Average value: 157 cm <sup>3</sup> /g Grade Count:3
			Average value: 0.00621 cm/cm Grade

Linear Mold Shrinkage Physical Properties	0.000600 - 0.0300 Metric cm/cm	0.000600 - 0.0300 in/in English	Count:175 Comments
Linear Mold Shrinkage, Transverse	0.00200 - 0.0400 cm/cm	0.00200 - 0.0400 in/in	Average value: 0.0111 cm/cm Grade Count:94
Melt Flow	4.00 - 130 g/10 min	4.00 - 130 g/10 min	Average value: 42.8 g/10 min Grade Count:13
Spiral Flow	35.0 - 700 cm	13.8 - 276 in	Average value: 110 cm Grade Count:10

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	111 - 122	111 - 122	Average value: 118 Grade Count:20
Ball Indentation Hardness	35.0 - 245 MPa	5080 - 35500 psi	Average value: 125 MPa Grade Count:24
Tensile Strength, Ultimate	16.5 - 524 MPa	2390 - 76000 psi	Average value: 126 MPa Grade Count:190
	70.0 - 155 MPa @Temperature 60.0 - 150 °C	10200 - 22500 psi @Temperature 140 - 302 °F	Average value: 61.4 MPa Grade Count:2
	7.36 - 191.87 MPa @Temperature -40.0 - 150 °C	1070 - 27828 psi @Temperature -40.0 - 302 °F	Average value: 61.4 MPa Grade Count:2
	7.36 - 191.87 MPa @Strain 0.180 - 160 %	1070 - 27828 psi @Strain 0.180 - 160 %	Average value: 61.4 MPa Grade Count:2
Tensile Strength, Yield	32.0 - 237 MPa	4640 - 34400 psi	Average value: 101 MPa Grade Count:51
Elongation at Break	0.500 - 240 %	0.500 - 240 %	Average value: 19.0 % Grade Count:193
	3.30 - 6.10 % @Temperature 60.0 - 150 °C	3.30 - 6.10 % @Temperature 140 - 302 °F	Average value: 36.4 % Grade Count:3
Elongation at Yield	1.50 - 100 %	1.50 - 100 %	Average value: 7.91 % Grade Count:58
Modulus of Elasticity	0.450 - 44.2 GPa	65.3 - 6410 ksi	Average value: 8.04 GPa Grade Count:181
	0.109 - 12.1 GPa @Temperature -40.0 - 150 °C	15.8 - 1750 ksi @Temperature -40.0 - 302 °F	Average value: 2.88 GPa Grade Count:7
Tenacity	0.370 - 0.509 N/tex	4.19 - 5.77 g/denier	Average value: 0.447 N/tex Grade Count:3
Flexural Yield Strength	22.0 - 393 MPa	3190 - 57000 psi	Average value: 206 MPa Grade Count:148

Mechanical Properties	Metric	English	Comments
Flexural Modulus	0.830 - 22.4 GPa	76.9 - 3250 ksi	Average value: 7.86 GPa Grade Count:164
Compressive Yield Strength	68.9 - 179 MPa	10000 - 26000 psi	Average value: 140 MPa Grade Count:12
Shear Modulus	0.477 - 3.05 GPa	69.2 - 443 ksi	Average value: 1.44 GPa Grade Count:3
	>= 0.0417 GPa @Temperature -50.0 - 150 °C	>= 6.05 ksi @Temperature -58.0 - 302 °F	Average value: 0.756 GPa Grade Count:3
Shear Strength	65.5 - 79.0 MPa	9500 - 11500 psi	Average value: 72.2 MPa Grade Count:3
	0.03597 - 0.677 MPa @Temperature 250 - 280 °C	5.217 - 98.2 psi @Temperature 482 - 536 °F	Average value: 0.280 MPa Grade Count:1
	0.03597 - 0.677 MPa @Shear Rate 50.0 - 5000 1/s	5.217 - 98.2 psi @Shear Rate 50.0 - 5000 1/s	Average value: 0.280 MPa Grade Count:1
Secant Modulus	0.901953 - 10.9027 GPa @Temperature -40.0 - 100 °C	130.819 - 1581.33 ksi @Temperature -40.0 - 212 °F	Average value: 5.67 GPa Grade Count:1
	0.901953 - 10.9027 GPa @Strain 0.190 - 10.2 %	130.819 - 1581.33 ksi @Strain 0.190 - 10.2 %	Average value: 5.67 GPa Grade Count:1
Izod Impact, Notched	0.290 - 6.03 J/cm	0.543 - 11.3 ft-lb/in	Average value: 1.10 J/cm Grade Count:126
Izod Impact, Unnotched	3.25 - 5340 J/cm	6.09 - 10000 ft-lb/in	Average value: 8.41 J/cm Grade Count:87
Izod Impact, Notched (ISO)	1.00 - 88.2 kJ/m <sup>2</sup>	0.476 - 42.0 ft-lb/in <sup>2</sup>	Average value: 15.8 kJ/m <sup>2</sup> Grade Count:56
Izod Impact, Unnotched (ISO)	20.0 - 21000 kJ/m <sup>2</sup>	9.52 - 9990 ft-lb/in <sup>2</sup>	Average value: 54.3 kJ/m <sup>2</sup> Grade Count:46
Charpy Impact Unnotched	3.00 - 1000 J/cm <sup>2</sup>	14.3 - 4760 ft-lb/in <sup>2</sup>	Average value: 8.87 J/cm <sup>2</sup> Grade Count:69
	4.50 - 999.9 J/cm <sup>2</sup> @Temperature -30.0 - 30.0 °C	21.4 - 4759 ft-lb/in <sup>2</sup> @Temperature -22.0 - 86.0 °F	Average value: 9.28 J/cm <sup>2</sup> Grade Count:42
Charpy Impact, Notched	0.370 - 1000 J/cm <sup>2</sup>	1.76 - 4760 ft-lb/in <sup>2</sup>	Average value: 2.01 J/cm <sup>2</sup> Grade Count:64
	0.300 - 2.10 J/cm <sup>2</sup>	1.43 - 9.99 ft-lb/in <sup>2</sup>	Average value: 1.09 J/cm <sup>2</sup> Grade

Mechanical Properties	@Temperature -40.0 - Metric 30.0 °C	@Temperature -40.0 - English 50.0 °F	Count:46 Comments
Gardner Impact	4.63 - 36.2 J	3.42 - 26.7 ft-lb	Average value: 28.3 J Grade Count:4
Dart Drop, Total Energy	1.00 - 22.0 J	0.738 - 16.2 ft-lb	Average value: 7.13 J Grade Count:23
Falling Dart Impact	8.50 - 11.8 J	6.27 - 8.70 ft-lb	Average value: 9.88 J Grade Count:4
Coefficient of Friction	0.190 - 0.710	0.190 - 0.710	Average value: 0.421 Grade Count:21
Coefficient of Friction, Static	0.100 - 0.520	0.100 - 0.520	Average value: 0.326 Grade Count:21
K (wear) Factor	6.04 - 894 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	3.00 - 444 x 10 <sup>-10</sup> in <sup>3</sup> - min/ft-lb-hr	Average value: 137 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M Grade Count:19
Taber Abrasion, mg/1000 Cycles	6.00	6.00	Average value: 6.00 Grade Count:5

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