

## Overview of materials for Nylon 6, Glass/Mineral Reinforced

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, Glass/Mineral Reinforced

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, Glass/Mineral Reinforced". 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-6-GlassMineral-Reinforced.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-6-GlassMineral-Reinforced.php)

| Physical Properties                | Metric                        | English                            | Comments  |
|------------------------------------|-------------------------------|------------------------------------|---|
| Density                            | 1.14 - 1.75 g/cc              | 0.0412 - 0.0632 lb/in <sup>3</sup> | Average value: 1.45 g/cc Grade Count:186            |
| Filler Content                     | 10.0 - 44.0 %                 | 10.0 - 44.0 %                      | Average value: 31.5 % Grade Count:30                |
| Water Absorption                   | 0.0900 - 8.00 %               | 0.0900 - 8.00 %                    | Average value: 3.43 % Grade Count:89                |
| Moisture Absorption at Equilibrium | 0.800 - 5.70 %                | 0.800 - 5.70 %                     | Average value: 1.99 % Grade Count:73                |
| Water Absorption at Saturation     | 3.50 - 5.00 %                 | 3.50 - 5.00 %                      | Average value: 4.26 % Grade Count:5                 |
| Viscosity Test                     | 95.0 - 160 cm <sup>3</sup> /g | 95.0 - 160 cm <sup>3</sup> /g      | Average value: 138 cm <sup>3</sup> /g Grade Count:9 |
| Linear Mold Shrinkage              | 0.000500 - 0.0150 cm/cm       | 0.000500 - 0.0150 in/in            | Average value: 0.00466 cm/cm Grade Count:151        |
| Linear Mold Shrinkage, Transverse  | 0.000800 - 0.0150 cm/cm       | 0.000800 - 0.0150 in/in            | Average value: 0.00824 cm/cm Grade Count:67         |
| Melt Flow                          | 3.00 - 116 g/10 min           | 3.00 - 116 g/10 min                | Average value: 35.7 g/10 min Grade Count:24         |

| Mechanical Properties      | Metric                      | English                     | Comments                               |
|----------------------------|-----------------------------|-----------------------------|--|
| Hardness, Rockwell M       | 78.0 - 90.0                 | 78.0 - 90.0                 | Average value: 86.0 Grade Count:3      |
| Hardness, Rockwell R       | 116 - 122                   | 116 - 122                   | Average value: 121 Grade Count:36      |
| Ball Indentation Hardness  | 90.0 - 320 MPa              | 13100 - 46400 psi           | Average value: 194 MPa Grade Count:5   |
| Tensile Strength, Ultimate | 45.0 - 174 MPa              | 6530 - 25200 psi            | Average value: 102 MPa Grade Count:142 |
|                            | 25.0 - 178 MPa              | 3630 - 25800 psi            | Average value: 66.1 MPa Grade Count:9  |
|                            | @Temperature -40.0 - 150 °C | @Temperature -40.0 - 302 °F |  |
|                            | 25.0 - 145 MPa              | 3630 - 21000 psi            |  |

| Mechanical Properties      | Metric<br>@ Temperature -30.0 -<br>120 °C               | English<br>@ Temperature -22.0 -<br>248 °F                 | Comments<br>Average value: 66.1 MPa Grade<br>Count:1 |
|----------------------------|---|--|--|
|                            | 25.0 - 145 MPa<br>@Strain 1.00 - 10.0 %                 | 3630 - 21000 psi<br>@Strain 1.00 - 10.0 %                  | Average value: 66.1 MPa Grade<br>Count:1             |
| Tensile Strength, Yield    | 40.0 - 186 MPa  | 5800 - 27000 psi   | Average value: 103 MPa Grade<br>Count:48             |
| Elongation at Break        | 1.00 - 183 %  | 1.00 - 183 %   | Average value: 4.88 % Grade<br>Count:166             |
|                            | 1.80 - 25.0 %<br>@Temperature -40.0 -<br>150 °C         | 1.80 - 25.0 %<br>@Temperature -40.0 -<br>302 °F            | Average value: 6.51 % Grade<br>Count:7               |
| Elongation at Yield        | 1.80 - 22.6 %   | 1.80 - 22.6 %  | Average value: 5.20 % Grade<br>Count:13              |
| Modulus of Elasticity      | 0.600 - 12.1 GPa  | 87.0 - 1750 ksi  | Average value: 6.84 GPa Grade<br>Count:104           |
|                            | 1.70 - 10.79 GPa<br>@Temperature -100 -<br>200 °C       | 247 - 1565 ksi<br>@Temperature -148 -<br>392 °F            | Average value: 4.65 GPa Grade<br>Count:9             |
| Flexural Yield Strength    | 50.0 - 261 MPa  | 7250 - 37800 psi   | Average value: 166 MPa Grade<br>Count:111            |
|                            | 70.0 - 245 MPa<br>@Temperature -40.0 -<br>90.0 °C       | 10200 - 35500 psi<br>@Temperature -40.0 -<br>194 °F        | Average value: 137 MPa Grade<br>Count:2              |
| Flexural Modulus           | 0.650 - 14.1 GPa  | 94.3 - 2050 ksi  | Average value: 7.23 GPa Grade<br>Count:127           |
|                            | 2.40 - 8.40 GPa<br>@Temperature -40.0 -<br>120 °C       | 348 - 1220 ksi<br>@Temperature -40.0 -<br>248 °F           | Average value: 4.30 GPa Grade<br>Count:3             |
| Compressive Yield Strength | 89.6 - 159 MPa  | 13000 - 23100 psi  | Average value: 119 MPa Grade<br>Count:8              |
| Shear Modulus              | >= 0.696 GPa<br>@Temperature -100 -<br>200 °C           | >= 101 ksi<br>@Temperature -148 -<br>392 °F                | Average value: 2.06 GPa Grade<br>Count:1             |
| Izod Impact, Notched       | 0.267 - 1.85 J/cm                                       | 0.500 - 3.47 ft-lb/in                                      | Average value: 0.649 J/cm Grade<br>Count:71          |
|                            | 0.280 - 0.700 J/cm<br>@Temperature -40.0 - -<br>20.0 °C | 0.525 - 1.31 ft-lb/in<br>@Temperature -40.0 - -<br>4.00 °F | Average value: 0.321 J/cm Grade<br>Count:4           |
|                            | 0.186865 - 0.186865<br>J/cm                             | 0.350075 - 0.350075<br>ft-lb/in                            | Average value: 0.321 J/cm Grade                      |

| Mechanical Properties        | Metric                             | English                            | Comments   |
|------------------------------|------------------------------------|------------------------------------|--|
|                              | @ Temperature -40.0 - -<br>40.0 °C | @ Temperature -40.0 - -<br>40.0 °F | Count:2  |
|                              | 0.186865 - 0.186865<br>J/cm        | 0.350075 - 0.350075<br>ft-lb/in    | Average value: 0.321 J/cm Grade<br>Count:2               |
|                              | @Thickness 3.17 - 3.17<br>mm       | @Thickness 0.125 -<br>0.125 in     |  |
| Izod Impact, Unnotched       | 3.74 J/cm - NB                     | 7.00 ft-lb/in - NB                 | Average value: 5.76 J/cm Grade<br>Count:17               |
| Izod Impact, Notched (ISO)   | 2.40 - 16.0 kJ/m <sup>2</sup>      | 1.14 - 7.61 ft-lb/in <sup>2</sup>  | Average value: 5.97 kJ/m <sup>2</sup> Grade<br>Count:55  |
|                              | 3.00 - 10.0 kJ/m <sup>2</sup>      | 1.43 - 4.76 ft-lb/in <sup>2</sup>  | Average value: 5.65 kJ/m <sup>2</sup> Grade<br>Count:15  |
|                              | @Temperature -40.0 - -<br>30.0 °C  | @Temperature -40.0 - -<br>22.0 °F  |  |
| Izod Impact, Unnotched (ISO) | 20.0 - 82.0 kJ/m <sup>2</sup>      | 9.52 - 39.0 ft-lb/in <sup>2</sup>  | Average value: 40.3 kJ/m <sup>2</sup> Grade<br>Count:7   |
|                              | 45.0 - 50.0 kJ/m <sup>2</sup>      | 21.4 - 23.8 ft-lb/in <sup>2</sup>  | Average value: 47.5 kJ/m <sup>2</sup> Grade<br>Count:2   |
|                              | @Temperature -30.0 - -<br>30.0 °C  | @Temperature -22.0 - -<br>22.0 °F  |  |
| Charpy Impact Unnotched      | 1.50 - 1000 J/cm <sup>2</sup>      | 7.14 - 4760 ft-lb/in <sup>2</sup>  | Average value: 4.78 J/cm <sup>2</sup> Grade<br>Count:77  |
|                              | 1.30 - 999.9 J/cm <sup>2</sup>     | 6.19 - 4759 ft-lb/in <sup>2</sup>  | Average value: 3.55 J/cm <sup>2</sup> Grade<br>Count:49  |
|                              | @Temperature -40.0 -<br>30.0 °C    | @Temperature -40.0 -<br>86.0 °F    |  |
| Charpy Impact, Notched       | 0.200 - 1.60 J/cm <sup>2</sup>     | 0.952 - 7.61 ft-lb/in <sup>2</sup> | Average value: 0.682 J/cm <sup>2</sup> Grade<br>Count:83 |
|                              | 0.200 - 1.00 J/cm <sup>2</sup>     | 0.952 - 4.76 ft-lb/in <sup>2</sup> | Average value: 0.478 J/cm <sup>2</sup> Grade<br>Count:50 |
|                              | @Temperature -40.0 -<br>30.0 °C    | @Temperature -40.0 -<br>86.0 °F    |  |
| Puncture Energy              | 1.50 - 1.80 J                      | 1.11 - 1.33 ft-lb                  | Average value: 1.65 J Grade Count:2                      |
|                              | @Temperature -30.0 - -<br>30.0 °C  | @Temperature -22.0 - -<br>22.0 °F  |  |

| Thermal Properties              | Metric             | English               | Comments                                      |
|---------------------------------|--------------------|-----------------------|---|
| CTE, linear                     | 14.4 - 110 µm/m-°C | 8.00 - 61.1 µin/in-°F | Average value: 35.9 µm/m-°C Grade<br>Count:53 |
| CTE, linear, Transverse to Flow | 34.0 - 100 µm/m-°C | 18.9 - 55.6 µin/in-°F | Average value: 66.3 µm/m-°C Grade<br>Count:24 |

| Electrical Properties | Metric             | English            | Comments                       |
|-----------------------|--------------------|--------------------|--------------------------------|
|                       | 1.00e+9 - 1.00e+15 | 1.00e+9 - 1.00e+15 | Average value: 2.37e+14 ohm-cm |

| Electrical Resistivity<br>Electrical Properties | ohm-cm<br>Metric           | ohm-cm<br>English          | Grade Count:72<br>Comments                    |
|---|----------------------------|----------------------------|---|
| Surface Resistance                              | 1.00e+10 - 1.00e+16<br>ohm | 1.00e+10 - 1.00e+16<br>ohm | Average value: 3.60e+14 ohm Grade<br>Count:36 |
| Dielectric Constant                             | 3.00 - 14.0                | 3.00 - 14.0                | Average value: 5.37 Grade Count:48            |
| Dielectric Strength                             | 11.8 - 90.0 kV/mm          | 300 - 2290 kV/in           | Average value: 27.8 kV/mm Grade<br>Count:50   |
| Dissipation Factor                              | 0.00380 - 0.400            | 0.00380 - 0.400            | Average value: 0.0895 Grade<br>Count:36       |
| Dielectric Loss Index                           | 0.0200 - 0.200             | 0.0200 - 0.200             | Average value: 0.110 Grade Count:6            |
| Arc Resistance                                  | 100 - 130 sec              | 100 - 130 sec              | Average value: 119 sec Grade Count:6          |
| Comparative Tracking Index                      | 300 - 600 V                | 300 - 600 V                | Average value: 501 V Grade Count:45           |

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