

## Ensinger Tecamid® 6/6 Nylon (PA66)

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Unreinforced

### Material Notes:

Type 6/6 is a general purpose standard grade nylon. Extruded in natural and black. (Weather Resistant Black Grade is also available.) Information provided by Ensinger, Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Ensinger-Tecamid-66-Nylon-PA66.php](http://www.lookpolymers.com/polymer_Ensinger-Tecamid-66-Nylon-PA66.php)

| Physical Properties            | Metric    | English                   | Comments               |
|--------------------------------|-----------|---------------------------|------------------------|
| Density                        | 1.14 g/cc | 0.0412 lb/in <sup>3</sup> | ASTM D792              |
| Water Absorption               | 1.2 %     | 1.2 %                     | at 24 hours; ASTM D570 |
| Water Absorption at Saturation | 8.5 %     | 8.5 %                     | ASTM D570              |

| Mechanical Properties            | Metric                                      | English                                               | Comments                   |
|----------------------------------|---------------------------------------------|-------------------------------------------------------|----------------------------|
| Hardness, Rockwell M             | 90                                          | 90                                                    | ASTM D785                  |
| Tensile Strength, Yield          | 80.0 MPa                                    | 11600 psi                                             | ASTM D638                  |
| Elongation at Break              | 25 %                                        | 25 %                                                  | ASTM D638                  |
| Tensile Modulus                  | 2.41 GPa                                    | 350 ksi                                               | ASTM D638                  |
| Flexural Strength                | 107 MPa                                     | 15500 psi                                             | ASTM D790                  |
| Flexural Modulus                 | 3.03 GPa                                    | 440 ksi                                               | ASTM D790                  |
| Compressive Strength             | 34.5 MPa                                    | 5000 psi                                              | ASTM D695                  |
| Izod Impact, Notched             | 0.587 J/cm                                  | 1.10 ft-lb/in                                         | ASTM D256                  |
| Coefficient of Friction, Dynamic | 0.26                                        | 0.26                                                  | 40 psi, 50 fpm; ASTM D3702 |
| K (wear) Factor                  | 403 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M | 200 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr | 40 psi, 50 fpm; ASTM D3702 |

| Thermal Properties               | Metric               | English              | Comments               |
|----------------------------------|----------------------|----------------------|------------------------|
| CTE, linear                      | 81.0 µm/m-°C         | 45.0 µin/in-°F       | ASTM D696              |
|                                  | @Temperature 20.0 °C | @Temperature 68.0 °F |                        |
| Specific Heat Capacity           | 1.67 J/g-°C          | 0.400 BTU/lb-°F      |                        |
| Melting Point                    | 255 °C               | 491 °F               | ASTM D2133             |
| Maximum Service Temperature, Air | 85.0 °C              | 185 °F               | Long Term; ASTM UL746B |

| Thermal Properties                          | Metric                    | English                    | Comments  |
|---------------------------------------------|---------------------------|----------------------------|-----------|
| Deflection Temperature at 0.46 MPa (66 psi) | 235 °C                    | 455 °F                     | ASTM D648 |
| Deflection Temperature at 1.8 MPa (264 psi) | 90.0 °C                   | 194 °F                     | ASTM D648 |
| Flammability, UL94                          | V-2<br>@Thickness 3.00 mm | V-2<br>@Thickness 0.118 in |           |

| Electrical Properties | Metric             | English            | Comments  |
|-----------------------|--------------------|--------------------|-----------|
| Volume Resistivity    | 1.00e+15 ohm-cm    | 1.00e+15 ohm-cm    | ASTM D257 |
| Dielectric Constant   | 3.6                | 3.6                | ASTM D150 |
|                       | @Frequency 1e+6 Hz | @Frequency 1e+6 Hz |           |
|                       | 4.0                | 4.0                | ASTM D150 |
|                       | @Frequency 60 Hz   | @Frequency 60 Hz   |           |
| Dielectric Strength   | 11.8 - 15.7 kV/mm  | 300 - 400 kV/in    | ASTM D149 |
| Dissipation Factor    | 0.010              | 0.010              | ASTM D150 |
|                       | @Frequency 60 Hz   | @Frequency 60 Hz   |           |

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