

## SABIC Innovative Plastics LNP THERMOTUF VF1001S Super Tough Nylon

Category : Polymer , Thermoplastic , Nylon

### Material Notes:

LNP\* Thermotuf\* VF1001S is a Super Tough Nylon containing glass fiber. Characteristics of this grade is Heat Stabilized.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-LNP-THERMOTUF-VF1001S-Super-Tough-Nylon.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-LNP-THERMOTUF-VF1001S-Super-Tough-Nylon.php)

| Physical Properties               | Metric              | English                   | Comments                           |
|-----------------------------------|---------------------|---------------------------|------------------------------------|
| Density                           | 1.12 g/cc           | 0.0405 lb/in <sup>3</sup> | ASTM D792                          |
|                                   | 1.12 g/cc           | 0.0405 lb/in <sup>3</sup> | ISO 1183                           |
| Moisture Absorption               | 0.680 %             | 0.680 %                   | 50% RH, 24 hrs; ASTM D570          |
|                                   | 1.10 %              | 1.10 %                    | 23 <sup>o</sup> C / 50% RH; ISO 62 |
| Linear Mold Shrinkage, Flow       | >= 0.020 cm/cm      | >= 0.020 in/in            | ASTM D955                          |
|                                   | @Time 86400 sec     | @Time 24.0 hour           |                                    |
| Linear Mold Shrinkage, Transverse | 0.010 - 0.030 cm/cm | 0.010 - 0.030 in/in       | ASTM D955                          |
|                                   | @Time 86400 sec     | @Time 24.0 hour           |                                    |

| Mechanical Properties     | Metric   | English   | Comments                     |
|---------------------------|----------|-----------|------------------------------|
| Tensile Strength at Break | 56.0 MPa | 8120 psi  | Type I, 5 mm/min; ASTM D638  |
|                           | 56.0 MPa | 8120 psi  | 5 mm/min; ISO 527            |
| Tensile Strength, Yield   | 61.0 MPa | 8850 psi  | Type I, 5 mm/min; ASTM D638  |
|                           | 61.0 MPa | 8850 psi  | 5 mm/min; ISO 527            |
| Elongation at Break       | 7.6 %    | 7.6 %     | 5 mm/min; ISO 527            |
|                           | 9.3 %    | 9.3 %     | Type I, 5 mm/min; ASTM D638  |
| Elongation at Yield       | 3.4 %    | 3.4 %     | Type I, 5 mm/min; ASTM D638  |
|                           | 3.4 %    | 3.4 %     | 5 mm/min; ISO 527            |
| Tensile Modulus           | 3.29 GPa | 477 ksi   | 1 mm/min; ISO 527            |
|                           | 3.39 GPa | 492 ksi   | 50 mm/min; ASTM D638         |
| Flexural Strength         | 86.0 MPa | 12500 psi | ISO 178                      |
| Flexural Modulus          | 2.76 GPa | 400 ksi   | 2 mm/min; ISO 178            |
|                           | 2.94 GPa | 426 ksi   | 1.3 mm/min, 50 mm span; ASTM |

| Mechanical Properties        | Metric                             | English                             | 0790<br>Comments            |
|------------------------------|------------------------------------|-------------------------------------|-----------------------------|
| Izod Impact, Notched         | 1.06 J/cm                          | 1.99 ft-lb/in                       | ASTM D256                   |
| Izod Impact, Unnotched       | 7.20 J/cm                          | 13.5 ft-lb/in                       | ASTM D4812                  |
| Izod Impact, Notched (ISO)   | 9.00 kJ/m <sup>2</sup>             | 4.28 ft-lb/in <sup>2</sup>          | 80*10*4; ISO 180/1A         |
| Izod Impact, Unnotched (ISO) | 41.0 kJ/m <sup>2</sup>             | 19.5 ft-lb/in <sup>2</sup>          | 80*10*4; ISO 180/1U         |
| Dart Drop, Total Energy      | 8.00 J<br>@Temperature 23.0<br>Â°C | 5.90 ft-lb<br>@Temperature 73.4 Â°F | ASTM D3763                  |
| Impact Test                  | 11.0 J                             | 8.11 ft-lb                          | Multiaxial Impact; ISO 6603 |

| Thermal Properties                             | Metric   | English  | Comments                         |
|--|--|--|----------------------------------|
| CTE, linear, Parallel to Flow                  | 63.7 Âµm/m-Â°C<br>@Temperature -30.0 -<br>30.0 Â°C | 35.4 Âµin/in-Â°F<br>@Temperature -22.0 -<br>86.0 Â°F | ASTM D696                        |
| CTE, linear, Transverse to Flow                | 97.9 Âµm/m-Â°C<br>@Temperature -30.0 -<br>30.0 Â°C | 54.4 Âµin/in-Â°F<br>@Temperature -22.0 -<br>86.0 Â°F | ASTM D696                        |
| Deflection Temperature at 0.46 MPa<br>(66 psi) | 242 Â°C  | 468 Â°F  | Flatw 80*10*4 sp=64mm; ISO 75/Bf |
|  | 249 Â°C<br>@Thickness 3.20 mm                      | 480 Â°F<br>@Thickness 0.126 in                       | unannealed; ASTM D648            |
| Deflection Temperature at 1.8 MPa<br>(264 psi) | 154 Â°C  | 309 Â°F  | Flatw 80*10*4 sp=64mm; ISO 75/Af |
|  | 198 Â°C<br>@Thickness 3.20 mm                      | 388 Â°F<br>@Thickness 0.126 in                       | unannealed; ASTM D648            |

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