

## DuPont Performance Polymers Zytel® E42A NC010 Nylon 66 (Unverified Data\*\*)

Category : Polymer , Thermoplastic , Nylon , Nylon 66

### Material Notes:

Zytel® E42A is a high viscosity polyamide 66 for injection molding and extrusion. It has improved break resistance for thick-walled parts. Information provided by DuPont Performance Polymers

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DuPont-Performance-Polymers-Zytel-E42A-NC010-Nylon-66-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-E42A-NC010-Nylon-66-nbspUnverified-Data.php)

| Physical Properties                      | Metric                                   | English                                  | Comments                                      |
|--|--|--|---|
| Density                                  | 1.14 g/cc                                | 0.0412 lb/in <sup>3</sup>                | DAM; ISO 1183                                 |
| Water Absorption                         | 2.7 %                                    | 2.7 %                                    | Equilibrium 50%RH; DAM; ISO 62, Similar to    |
|  | @Temperature 23.0 °C                     | @Temperature 73.4 °F                     |   |
|  | 8.5 %                                    | 8.5 %                                    | Saturation, immersed; DAM; ISO 62, Similar to |
|  | @Temperature 23.0 °C                     | @Temperature 73.4 °F                     |   |
| Viscosity                                | 109000 cP                                | 109000 cP                                | DAM; ISO 11443                                |
|  | @Shear Rate 7000 1/s, Temperature 305 °C | @Shear Rate 7000 1/s, Temperature 581 °F |   |
|  | 119000 cP                                | 119000 cP                                | DAM; ISO 11443                                |
|  | @Shear Rate 7000 1/s, Temperature 295 °C | @Shear Rate 7000 1/s, Temperature 563 °F |   |
|  | 136000 cP                                | 136000 cP                                | DAM; ISO 11443                                |
|  | @Shear Rate 5000 1/s, Temperature 305 °C | @Shear Rate 5000 1/s, Temperature 581 °F |   |
|  | 144000 cP                                | 144000 cP                                | DAM; ISO 11443                                |
|  | @Shear Rate 7000 1/s, Temperature 275 °C | @Shear Rate 7000 1/s, Temperature 527 °F |   |
|  | 150000 cP                                | 150000 cP                                | DAM; ISO 11443                                |
| @Shear Rate 5000 1/s, Temperature 295 °C | @Shear Rate 5000 1/s, Temperature 563 °F |  |   |
| 182000 cP                                | 182000 cP                                | DAM; ISO 11443                           |   |
| @Shear Rate 5000 1/s, Temperature 275 °C | @Shear Rate 5000 1/s, Temperature 527 °F |  |   |
| 243000 cP                                | 243000 cP                                | DAM; ISO 11443                           |   |
| @Shear Rate 2000 1/s, Temperature 305 °C | @Shear Rate 2000 1/s, Temperature 581 °F |  |   |

| Physical Properties               | 274000 cP<br>Metric                         | 274000 cP<br>English                        | Comments<br>DAM; ISO 11443 |
|-----------------------------------|---|---|----------------------------|
|                                   | @Shear Rate 2000 1/s,<br>Temperature 295 °C | @Shear Rate 2000 1/s,<br>Temperature 563 °F |                            |
|                                   | 342000 cP                                   | 342000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 2000 1/s,<br>Temperature 275 °C | @Shear Rate 2000 1/s,<br>Temperature 527 °F |                            |
|                                   | 360000 cP                                   | 360000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 1000 1/s,<br>Temperature 305 °C | @Shear Rate 1000 1/s,<br>Temperature 581 °F |                            |
|                                   | 413000 cP                                   | 413000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 1000 1/s,<br>Temperature 295 °C | @Shear Rate 1000 1/s,<br>Temperature 563 °F |                            |
|                                   | 431000 cP                                   | 431000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 700 1/s,<br>Temperature 305 °C  | @Shear Rate 700 1/s,<br>Temperature 581 °F  |                            |
|                                   | 501000 cP                                   | 501000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 700 1/s,<br>Temperature 295 °C  | @Shear Rate 700 1/s,<br>Temperature 563 °F  |                            |
|                                   | 504000 cP                                   | 504000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 500 1/s,<br>Temperature 305 °C  | @Shear Rate 500 1/s,<br>Temperature 581 °F  |                            |
|                                   | 535000 cP                                   | 535000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 1000 1/s,<br>Temperature 275 °C | @Shear Rate 1000 1/s,<br>Temperature 527 °F |                            |
|                                   | 593000 cP                                   | 593000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 500 1/s,<br>Temperature 295 °C  | @Shear Rate 500 1/s,<br>Temperature 563 °F  |                            |
|                                   | 664000 cP                                   | 664000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 700 1/s,<br>Temperature 275 °C  | @Shear Rate 700 1/s,<br>Temperature 527 °F  |                            |
|                                   | 806000 cP                                   | 806000 cP                                   | DAM; ISO 11443             |
|                                   | @Shear Rate 500 1/s,<br>Temperature 275 °C  | @Shear Rate 500 1/s,<br>Temperature 527 °F  |                            |
| Linear Mold Shrinkage, Flow       | 0.014 cm/cm                                 | 0.014 in/in                                 | DAM; ISO 294-4             |
|                                   | @Thickness 2.00 mm                          | @Thickness 0.0787 in                        |                            |
| Linear Mold Shrinkage, Transverse | 0.014 cm/cm                                 | 0.014 in/in                                 | DAM; ISO 294-4             |
|                                   | @Thickness 2.00 mm                          | @Thickness 0.0787 in                        |                            |

| Mechanical Properties | Metric                                  | English                                | Comments       |
|-----------------------|---|--|----------------|
| Tensile Stress        | 13.4 MPa                                | 1940 psi                               | 50%RH; ISO 527 |
|                       | @Strain 3.00 %,<br>Temperature 90.0 °C  | @Strain 3.00 %,<br>Temperature 194 °F  |                |
|                       | 14.5 MPa                                | 2100 psi                               | 50%RH; ISO 527 |
|                       | @Strain 5.00 %,<br>Temperature 120 °C   | @Strain 5.00 %,<br>Temperature 248 °F  |                |
|                       | 15.9 MPa                                | 2310 psi                               | 50%RH; ISO 527 |
|                       | @Strain 3.00 %,<br>Temperature 60.0 °C  | @Strain 3.00 %,<br>Temperature 140 °F  |                |
|                       | 17.6 MPa                                | 2550 psi                               | DAM; ISO 527   |
|                       | @Strain 5.00 %,<br>Temperature 120 °C   | @Strain 5.00 %,<br>Temperature 248 °F  |                |
|                       | 19.7 MPa                                | 2860 psi                               | 50%RH; ISO 527 |
|                       | @Strain 3.00 %,<br>Temperature 40.0 °C  | @Strain 3.00 %,<br>Temperature 104 °F  |                |
|                       | 20.9 MPa                                | 3030 psi                               | 50%RH; ISO 527 |
|                       | @Strain 10.0 %,<br>Temperature 120 °C   | @Strain 10.0 %,<br>Temperature 248 °F  |                |
|                       | 21.1 MPa                                | 3060 psi                               | 50%RH; ISO 527 |
|                       | @Strain 6.00 %,<br>Temperature 90.0 °C  | @Strain 6.00 %,<br>Temperature 194 °F  |                |
|                       | 21.8 MPa                                | 3160 psi                               | DAM; ISO 527   |
|                       | @Strain 5.00 %,<br>Temperature 90.0 °C  | @Strain 5.00 %,<br>Temperature 194 °F  |                |
|                       | 22.4 MPa                                | 3250 psi                               | DAM; ISO 527   |
|                       | @Strain 0.800 %,<br>Temperature 40.0 °C | @Strain 0.800 %,<br>Temperature 104 °F |                |
|                       | 23.5 MPa                                | 3410 psi                               | DAM; ISO 527   |
|                       | @Strain 10.0 %,<br>Temperature 120 °C   | @Strain 10.0 %,<br>Temperature 248 °F  |                |
|                       | 24.2 MPa                                | 3510 psi                               | 50%RH; ISO 527 |
|                       | @Strain 15.0 %,<br>Temperature 120 °C   | @Strain 15.0 %,<br>Temperature 248 °F  |                |
|                       | 24.8 MPa                                | 3600 psi                               | 50%RH; ISO 527 |
|                       | @Strain 6.00 %,<br>Temperature 60.0 °C  | @Strain 6.00 %,<br>Temperature 140 °F  |                |

| Mechanical Properties | 24.9 MPa<br>Metric                      | 3610 psi<br>English                     | Comments<br>DAM; ISO 527 |
|-----------------------|---|---|--------------------------|
|                       | @Strain 0.800 %,<br>Temperature 23.0 °C | @Strain 0.800 %,<br>Temperature 73.4 °F |                          |
|                       | <b>25.8 MPa</b>                         | <b>3740 psi</b>                         |                          |
|                       | @Strain 9.00 %,<br>Temperature 90.0 °C  | @Strain 9.00 %,<br>Temperature 194 °F   | 50%RH; ISO 527           |
|                       | <b>26.1 MPa</b>                         | <b>3790 psi</b>                         |                          |
|                       | @Strain 20.0 %,<br>Temperature 120 °C   | @Strain 20.0 %,<br>Temperature 248 °F   | 50%RH; ISO 527           |
|                       | <b>26.3 MPa</b>                         | <b>3810 psi</b>                         |                          |
|                       | @Strain 15.0 %,<br>Temperature 120 °C   | @Strain 15.0 %,<br>Temperature 248 °F   | DAM; ISO 527             |
|                       | <b>27.2 MPa</b>                         | <b>3950 psi</b>                         |                          |
|                       | @Strain 25.0 %,<br>Temperature 120 °C   | @Strain 25.0 %,<br>Temperature 248 °F   | 50%RH; ISO 527           |
|                       | <b>27.2 MPa</b>                         | <b>3950 psi</b>                         |                          |
|                       | @Strain 3.00 %,<br>Temperature 60.0 °C  | @Strain 3.00 %,<br>Temperature 140 °F   | DAM; ISO 527             |
|                       | <b>27.9 MPa</b>                         | <b>4050 psi</b>                         |                          |
|                       | @Strain 30.0 %,<br>Temperature 120 °C   | @Strain 30.0 %,<br>Temperature 248 °F   | 50%RH; ISO 527           |
|                       | <b>27.9 MPa</b>                         | <b>4050 psi</b>                         |                          |
|                       | @Strain 20.0 %,<br>Temperature 120 °C   | @Strain 20.0 %,<br>Temperature 248 °F   | DAM; ISO 527             |
|                       | <b>28.2 MPa</b>                         | <b>4090 psi</b>                         |                          |
|                       | @Strain 35.0 %,<br>Temperature 120 °C   | @Strain 35.0 %,<br>Temperature 248 °F   | 50%RH; ISO 527           |
|                       | <b>28.3 MPa</b>                         | <b>4100 psi</b>                         |                          |
|                       | @Strain 40.0 %,<br>Temperature 120 °C   | @Strain 40.0 %,<br>Temperature 248 °F   | 50%RH; ISO 527           |
|                       | <b>28.4 MPa</b>                         | <b>4120 psi</b>                         |                          |
|                       | @Strain 45.0 %,<br>Temperature 120 °C   | @Strain 45.0 %,<br>Temperature 248 °F   | 50%RH; ISO 527           |
|                       | <b>28.5 MPa</b>                         | <b>4130 psi</b>                         |                          |
|                       | @Strain 50.0 %,<br>Temperature 120 °C   | @Strain 50.0 %,<br>Temperature 248 °F   | 50%RH; ISO 527           |
|                       | <b>28.5 MPa</b>                         | <b>4130 psi</b>                         |                          |
|                       | @Strain 3.00 %,                         | @Strain 3.00 %,                         | 50%RH; ISO 527           |

| Mechanical Properties | Temperature 23.0 °C                    | Temperature 73.4 °F                   | Comments       |
|-----------------------|--|---------------------------------------|----------------|
|                       | Metric                                 | English                               |                |
|                       | 28.8 MPa                               | 4180 psi                              |                |
|                       | @Strain 12.0 %,<br>Temperature 90.0 °C | @Strain 12.0 %,<br>Temperature 194 °F | 50%RH; ISO 527 |
|                       | 28.9 MPa                               | 4190 psi                              |                |
|                       | @Strain 25.0 %,<br>Temperature 120 °C  | @Strain 25.0 %,<br>Temperature 248 °F | DAM; ISO 527   |
|                       | 29.6 MPa                               | 4290 psi                              |                |
|                       | @Strain 30.0 %,<br>Temperature 120 °C  | @Strain 30.0 %,<br>Temperature 248 °F | DAM; ISO 527   |
|                       | 29.6 MPa                               | 4290 psi                              |                |
|                       | @Strain 10.0 %,<br>Temperature 90.0 °C | @Strain 10.0 %,<br>Temperature 194 °F | DAM; ISO 527   |
|                       | 30.0 MPa                               | 4350 psi                              |                |
|                       | @Strain 35.0 %,<br>Temperature 120 °C  | @Strain 35.0 %,<br>Temperature 248 °F | DAM; ISO 527   |
|                       | 30.1 MPa                               | 4370 psi                              |                |
|                       | @Strain 6.00 %,<br>Temperature 40.0 °C | @Strain 6.00 %,<br>Temperature 104 °F | 50%RH; ISO 527 |
|                       | 30.3 MPa                               | 4390 psi                              |                |
|                       | @Strain 9.00 %,<br>Temperature 60.0 °C | @Strain 9.00 %,<br>Temperature 140 °F | 50%RH; ISO 527 |
|                       | 30.4 MPa                               | 4410 psi                              |                |
|                       | @Strain 40.0 %,<br>Temperature 120 °C  | @Strain 40.0 %,<br>Temperature 248 °F | DAM; ISO 527   |
|                       | 30.6 MPa                               | 4440 psi                              |                |
|                       | @Strain 45.0 %,<br>Temperature 120 °C  | @Strain 45.0 %,<br>Temperature 248 °F | DAM; ISO 527   |
|                       | 30.7 MPa                               | 4450 psi                              |                |
|                       | @Strain 15.0 %,<br>Temperature 90.0 °C | @Strain 15.0 %,<br>Temperature 194 °F | 50%RH; ISO 527 |
|                       | 30.7 MPa                               | 4450 psi                              |                |
|                       | @Strain 50.0 %,<br>Temperature 120 °C  | @Strain 50.0 %,<br>Temperature 248 °F | DAM; ISO 527   |
|                       | 31.9 MPa                               | 4630 psi                              |                |
|                       | @Strain 18.0 %,<br>Temperature 90.0 °C | @Strain 18.0 %,<br>Temperature 194 °F | 50%RH; ISO 527 |
|                       | 32.7 MPa                               | 4740 psi                              |                |

| Mechanical Properties | Metric                                 | English                               | 50%RH; ISO 527<br>Comments |
|-----------------------|--|---------------------------------------|----------------------------|
|                       | @Strain 21.0 %,<br>Temperature 90.0 °C | @Strain 21.0 %,<br>Temperature 194 °F |                            |
|                       | 33.1 MPa                               | 4800 psi                              |                            |
|                       | @Strain 24.0 %,<br>Temperature 90.0 °C | @Strain 24.0 %,<br>Temperature 194 °F | 50%RH; ISO 527             |
|                       | 33.3 MPa                               | 4830 psi                              |                            |
|                       | @Strain 27.0 %,<br>Temperature 90.0 °C | @Strain 27.0 %,<br>Temperature 194 °F | 50%RH; ISO 527             |
|                       | 33.4 MPa                               | 4840 psi                              |                            |
|                       | @Strain 30.0 %,<br>Temperature 90.0 °C | @Strain 30.0 %,<br>Temperature 194 °F | 50%RH; ISO 527             |

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