

# Celanese Zytel® FN718

Categories: Polymer; Thermoplastic; Nylon (Polyamide PA); Nylon 66 (PA66)  
 Material Notes: Flexible Polyamide 66  
 Former DuPont product acquired by Celanese in 2022.

| Physical Properties | Metric    | English       | Comments      |
|---------------------|-----------|---------------|---------------|
| Density             | 1.04 g/cc | 0.0376 lb/in³ | DAM; ISO 1183 |

|                     |                              |                                |                     |
|---------------------|------------------------------|--------------------------------|---------------------|
| Moisture Absorption | 1.40 %<br>@Thickness 2.00 mm | 1.40 %<br>@Thickness 0.0787 in | DAM; Sim. to ISO 62 |
|---------------------|------------------------------|--------------------------------|---------------------|

| Mechanical Properties    | Metric                   | English                  | Comments             |
|--------------------------|--------------------------|--------------------------|----------------------|
| Tensile Stress at Strain | 21.0 MPa<br>@Strain 50 % | 3050 psi<br>@Strain 50 % | 50% RH; ISO 527-1/-2 |
|                          | 33.0 MPa<br>@Strain 50 % | 4790 psi<br>@Strain 50 % | DAM; ISO 527-1/-2    |

|                     |         |         |                      |
|---------------------|---------|---------|----------------------|
| Elongation at Break | >= 50 % | >= 50 % | 50% RH; ISO 527-1/-2 |
|                     | >= 50 % | >= 50 % | DAM; ISO 527-1/-2    |

|                 |           |          |                      |
|-----------------|-----------|----------|----------------------|
| Tensile Modulus | 0.440 GPa | 63.8 ksi | 50% RH; ISO 527-1/-2 |
|                 | 0.900 GPa | 131 ksi  | DAM; ISO 527-1/-2    |

|                  |           |         |              |
|------------------|-----------|---------|--------------|
| Flexural Modulus | 0.900 GPa | 131 ksi | DAM; ISO 178 |
|------------------|-----------|---------|--------------|

|                |      |      |        |
|----------------|------|------|--------|
| Poissons Ratio | 0.45 | 0.45 | DAM    |
|                | 0.47 | 0.47 | 50% RH |

|                            |                                     |                                         |                 |
|----------------------------|-------------------------------------|-----------------------------------------|-----------------|
| Izod Impact, Notched (ISO) | 25.0 kJ/m²<br>@Temperature -40.0 °C | 11.9 ft-lb/in²<br>@Temperature -40.0 °F | DAM; ISO 180/1A |
|----------------------------|-------------------------------------|-----------------------------------------|-----------------|

|  |                                    |                                        |                 |
|--|------------------------------------|----------------------------------------|-----------------|
|  | 95.0 kJ/m²<br>@Temperature 23.0 °C | 45.2 ft-lb/in²<br>@Temperature 73.4 °F | DAM; ISO 180/1A |
|--|------------------------------------|----------------------------------------|-----------------|

|                        |                                     |                                         |                  |
|------------------------|-------------------------------------|-----------------------------------------|------------------|
| Charpy Impact, Notched | 3.00 J/cm²<br>@Temperature -40.0 °C | 14.3 ft-lb/in²<br>@Temperature -40.0 °F | DAM; ISO 179/1eA |
|------------------------|-------------------------------------|-----------------------------------------|------------------|

|  |                                    |                                        |                  |
|--|------------------------------------|----------------------------------------|------------------|
|  | 10.5 J/cm²<br>@Temperature 23.0 °C | 50.0 ft-lb/in²<br>@Temperature 73.4 °F | DAM; ISO 179/1eA |
|--|------------------------------------|----------------------------------------|------------------|

| Thermal Properties | Metric | English | Comments                      |
|--------------------|--------|---------|-------------------------------|
| Melting Point      | 263 °C | 505 °F  | 10°C/min; DAM; ISO 11357-1/-3 |

|                                             |         |        |                  |
|---------------------------------------------|---------|--------|------------------|
| Deflection Temperature at 0.46 MPa (66 psi) | 68.0 °C | 154 °F | DAM; ISO 75-1/-2 |
|---------------------------------------------|---------|--------|------------------|

|                                             |         |        |                  |
|---------------------------------------------|---------|--------|------------------|
| Deflection Temperature at 1.8 MPa (264 psi) | 50.0 °C | 122 °F | DAM; ISO 75-1/-2 |
|---------------------------------------------|---------|--------|------------------|

Flame Spread

<= 80.0 mm/min  
@Thickness 1.00 mm

<= 3.15 in/min  
@Thickness 0.0394 in

ISO 3795 (FMVSS 302)

| Processing Properties | Metric           | English          | Comments                      |
|-----------------------|------------------|------------------|-------------------------------|
| Melt Temperature      | 275 - 290 °C     | 527 - 554 °F     | Range, Extrusion              |
|                       | 275 - 295 °C     | 527 - 563 °F     | Range, Injection              |
|                       | 285 °C           | 545 °F           | Optimum, Injection            |
| Mold Temperature      | 60.0 °C          | 140 °F           | Optimum, Injection            |
|                       | 40.0 - 80.0 °C   | 104 - 176 °F     | Injection                     |
| Drying Temperature    | 80.0 °C          | 176 °F           | Injection                     |
|                       | 80.0 °C          | 176 °F           | Extrusion                     |
| Dry Time              | 2.00 - 4.00 hour | 2.00 - 4.00 hour | Injection, Dehumidified Dryer |
|                       | 4.00 - 6.00 hour | 4.00 - 6.00 hour | Extrusion, Dehumidified Dryer |
| Moisture Content      | <= 0.060 %       | <= 0.060 %       | Extrusion                     |
|                       | <= 0.20 %        | <= 0.20 %        | Injection                     |

| Descriptive Properties |                                 |                      |
|------------------------|---------------------------------|----------------------|
| Drying Recommended     | yes                             | Injection            |
| FMVSS Class            | B                               | ISO 3795 (FMVSS 302) |
| ISO designation        | ISO 16396-PA66-F,,M1CG1,S14-010 |                      |
| Part Marking Code      | >PA66-F<                        | ISO 11469            |
| Polymer                | PA66...                         |                      |
| Resin Identification   | PA66-F                          | ISO 1043             |