

Celanese Zytel® 73G15HSL

Categories: Polymer; Thermoplastic; Nylon (Polyamide PA); Nylon 6 (PA6); Nylon 6, 20% Glass Fiber Filled
 Material Notes: 15% Glass Reinforced, Heat Stabilized, Polyamide 6
 Former DuPont product acquired by Celanese in 2022.

Physical Properties	Metric	English	Comments
Density	1.25 g/cc	0.0452 lb/in ³	DAM; ISO 1183
Water Absorption	7.6 % @Thickness 2.00 mm	7.6 % @Thickness 0.0787 in	DAM; Sim. to ISO 62
Moisture Absorption	2.50 % @Thickness 2.00 mm	2.50 % @Thickness 0.0787 in	DAM; Sim. to ISO 62
Viscosity Number	145 cm ³ /g	1.45 dl/g	DAM; ISO 307, 1157, 1628
Linear Mold Shrinkage, Flow	0.0030 cm/cm	0.0030 in/in	DAM; ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.0080 cm/cm	0.0080 in/in	DAM; ISO 294-4, 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	123 MPa	17800 psi	H 961/30; 50% RH; ISO 2039-1
	210 MPa	30500 psi	H 961/30; DAM; ISO 2039-1
Tensile Strength at Break	80.0 MPa	11600 psi	50% RH; ISO 527-1/-2
	130 MPa	18900 psi	DAM; ISO 527-1/-2
Elongation at Break	2.3 %	2.3 %	DAM; ISO 527-1/-2
	10 %	10 %	50% RH; ISO 527-1/-2
Tensile Modulus	4.00 GPa	580 ksi	50% RH; ISO 527-1/-2
	6.50 GPa	943 ksi	DAM; ISO 527-1/-2
Flexural Strength	90.0 MPa	13100 psi	50% RH; ISO 178
	190 MPa	27600 psi	DAM; ISO 178
Flexural Modulus	3.10 GPa	450 ksi	50% RH; ISO 178
	5.60 GPa	812 ksi	DAM; ISO 178
Poissons Ratio	0.35	0.35	DAM
	0.36	0.36	50% RH
Izod Impact, Unnotched (ISO)	6.00 kJ/m ² @Temperature 23.0 °C	2.86 ft-lb/in ² @Temperature 73.4 °F	DAM; ISO 180/1U
	7.00 kJ/m ² @Temperature 23.0 °C	3.33 ft-lb/in ² @Temperature 73.4 °F	50% RH; ISO 180/1U
Charpy Impact Unnotched	4.00 J/cm ² @Temperature -30.0 °C	19.0 ft-lb/in ² @Temperature -22.0 °F	50% RH; ISO 179/1eU
	4.00 J/cm ² @Temperature -30.0 °C	19.0 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 179/1eU
	4.00 J/cm ² @Temperature 23.0 °C	19.0 ft-lb/in ² @Temperature 73.4 °F	DAM; ISO 179/1eU
	7.00 J/cm ² @Temperature 23.0 °C	33.3 ft-lb/in ² @Temperature 73.4 °F	50% RH; ISO 179/1eU
Charpy Impact, Notched	0.500 J/cm ² @Temperature -30.0 °C	2.38 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 179/1eA

	0.600 J/cm ² @Temperature 23.0 °C	2.86 ft-lb/in ² @Temperature 73.4 °F	DAM; ISO 179/1eA
	0.700 J/cm ² @Temperature 23.0 °C	3.33 ft-lb/in ² @Temperature 73.4 °F	50% RH; ISO 179/1eA
	0.700 J/cm ² @Temperature -30.0 °C	3.33 ft-lb/in ² @Temperature -22.0 °F	50% RH; ISO 179/1eA

Electrical Properties	Metric	English	Comments
Dielectric Strength	21.5 kV/mm	546 kV/in	DAM; IEC 60243-1

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	16.0 µm/m-°C	8.89 µin/in-°F	DAM; ISO 11359-1/-2
	15.0 µm/m-°C @Temperature 55.0 - 160 °C	8.33 µin/in-°F @Temperature 131 - 320 °F	DAM; ISO 11359-1/-2
	35.0 µm/m-°C @Temperature -40.0 - 23.0 °C	19.4 µin/in-°F @Temperature -40.0 - 73.4 °F	DAM; ISO 11359-1/-2
CTE, linear, Transverse to Flow	90.0 µm/m-°C	50.0 µin/in-°F	DAM; ISO 11359-1/-2
	78.0 µm/m-°C @Temperature -40.0 - 23.0 °C	43.3 µin/in-°F @Temperature -40.0 - 73.4 °F	DAM; ISO 11359-1/-2
	100 µm/m-°C @Temperature 55.0 - 160 °C	55.6 µin/in-°F @Temperature 131 - 320 °F	DAM; ISO 11359-1/-2
Thermal Conductivity	0.200 W/m-K @Temperature 270 °C	1.39 BTU-in/hr-ft ² -°F @Temperature 518 °F	Melt
Melting Point	221 °C	430 °F	10°C/min; DAM; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	220 °C	428 °F	DAM; ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	204 °C	399 °F	DAM; ISO 75-1/-2
Vicat Softening Point	215 °C	419 °F	50°C/h, 50N; DAM; ISO 306
Glass Transition Temp, Tg	15.0 °C	59.0 °F	10°C/min; 50% RH; ISO 11357-1/-2
	55.0 °C	131 °F	10°C/min; DAM; ISO 11357-1/-2
Flammability, UL94	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	DAM; IEC 60695-11-10
Flame Spread	25.0 mm/min @Thickness 1.00 mm	0.984 in/min @Thickness 0.0394 in	ISO 3795 (FMVSS 302)
Oxygen Index	21 %	21 %	DAM; ISO 4589-1/-2