

Celanese Zytel® 70G43HSLA

Categories: Polymer; Thermoplastic; Nylon (Polyamide PA); Nylon 66 (PA66); Nylon 66, 40% Glass Fiber Filled

Material Notes: 43% Glass Reinforced, Heat Stabilized, Polyamide 66

Former DuPont product acquired by Celanese in 2022.

Physical Properties	Metric	English	Comments
Density	1.49 g/cc	0.0538 lb/in ³	DAM; ISO 1183
Water Absorption	4.7 %	4.7 %	DAM; Sim. to ISO 62
	@Thickness 2.00 mm	@Thickness 0.0787 in	
	0.90 %	0.90 %	Immersion; DAM; Sim. to ISO 62
	@Thickness 2.00 mm, Time 86400 sec	@Thickness 0.0787 in, Time 24.0 hour	
Moisture Absorption	1.50 %	1.50 %	DAM; Sim. to ISO 62
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Viscosity Number	110 cm ³ /g	1.10 dl/g	90% formic acid; 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	0.0090 cm/cm	0.0090 in/in	DAM; ISO 294-4, 2577
Melt Flow	35 g/10 min @Load 5.00 kg, Temperature 275 °C	35 g/10 min @Load 11.0 lb, Temperature 527 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	290 MPa	42100 psi	H 961/30; DAM; ISO 2039-1
Tensile Strength at Break	180 MPa	26100 psi	50% RH; ISO 527-1/-2
	230 MPa	33400 psi	DAM; ISO 527-1/-2
Elongation at Break	2.5 %	2.5 %	DAM; ISO 527-1/-2
	3.5 %	3.5 %	50% RH; ISO 527-1/-2
Tensile Modulus	11.0 GPa	1600 ksi	50% RH; ISO 527-1/-2
	14.0 GPa	2030 ksi	DAM; ISO 527-1/-2
Flexural Strength	260 MPa	37700 psi	50% RH; ISO 178
	340 MPa	49300 psi	DAM; ISO 178
Flexural Modulus	10.0 GPa	1450 ksi	50% RH; ISO 178
	13.0 GPa	1890 ksi	DAM; ISO 178
Poissons Ratio	0.33	0.33	DAM
	0.34	0.34	50% RH
Izod Impact, Notched (ISO)	14.0 kJ/m ²	6.66 ft-lb/in ²	DAM; ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	16.0 kJ/m ²	7.61 ft-lb/in ²	50% RH; ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	8.50 J/cm ²	40.4 ft-lb/in ²	DAM; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	9.00 J/cm ²	42.8 ft-lb/in ²	50% RH; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	

Charpy Impact, Notched	9.00 J/cm ² @Temperature 23.0 °C	42.8 ft-lb/in ² @Temperature 73.4 °F	DAM; ISO 179/1eU
	9.50 J/cm ² @Temperature 23.0 °C	45.2 ft-lb/in ² @Temperature 73.4 °F	50% RH; ISO 179/1eU
	1.40 J/cm ² @Temperature -30.0 °C	6.66 ft-lb/in ² @Temperature -22.0 °F	50% RH; ISO 179/1eA
	1.60 J/cm ² @Temperature -30.0 °C	7.61 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 179/1eA
	1.60 J/cm ² @Temperature 23.0 °C	7.61 ft-lb/in ² @Temperature 73.4 °F	DAM; ISO 179/1eA
	1.80 J/cm ² @Temperature 23.0 °C	8.57 ft-lb/in ² @Temperature 73.4 °F	50% RH; ISO 179/1eA

Impact Test	4.40 J @Thickness 2.00 mm	3.25 ft-lb @Thickness 0.0787 in	Multiaxial Impact, Total Energy; 4.5m/s; DAM; ISO 6603-2
Puncture Energy	4.40 J @Temperature 23.0 °C	3.25 ft-lb @Temperature 73.4 °F	DAM; ISO 6603-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	DAM; IEC 62631-3-1
Dielectric Strength	25.0 kV/mm	635 kV/in	DAM; IEC 60243-1
Dissipation Factor	0.013 @Frequency 100 Hz	0.013 @Frequency 100 Hz	DAM; IEC 62631-2-1
	0.015 @Frequency 1e+6 Hz	0.015 @Frequency 1e+6 Hz	DAM; IEC 62631-2-1
Comparative Tracking Index	600 V	600 V	DAM; IEC 60112

Thermal Properties	Metric	English	Comments
Thermal Conductivity	0.250 W/m-K @Temperature 295 °C	1.74 BTU-in/hr-ft ² -°F @Temperature 563 °F	Melt
Melting Point	262 °C	504 °F	10°C/min; DAM; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	258 °C	496 °F	DAM; ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	255 °C	491 °F	DAM; ISO 75-1/-2
Glass Transition Temp, Tg	20.0 °C	68.0 °F	10°C/min; 50% RH; ISO 11357-1/-2
	80.0 °C	176 °F	10°C/min; DAM; ISO 11357-1/-2
Flame Spread	27.0 mm/min @Thickness 1.00 mm	1.06 in/min @Thickness 0.0394 in	ISO 3795 (FMVSS 302)

Oxygen Index	24 %	24 %	DAM; ISO 4589-1/-2
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Processing Properties	Metric	English	Comments
Melt Temperature	285 - 300 °C	545 - 572 °F	Range, Injection
	295 °C	563 °F	Optimum, Injection
Mold Temperature	70.0 - 120 °C	158 - 248 °F	Injection
	100 °C	212 °F	Optimum, Injection
Ejection Temperature	210 °C	410 °F	Injection
Drying Temperature	80.0 °C	176 °F	Injection
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	Injection, Dehumidified Dryer
Moisture Content	<= 0.20 %	<= 0.20 %	Injection
Hold Pressure	50.0 - 100 MPa	7250 - 14500 psi	Range, Injection

Descriptive Properties			
Additives	Release agent		
Drying Recommended	yes		Injection
FMVSS Class	B		ISO 3795 (FMVSS 302)
ISO designation	ISO 16396-PA66,GF43,M1CGHR,S10-140		
Max. screw tangential speed (m/s)	0.2		Injection
Part Marking Code	>PA66-GF43<		ISO 11469
Polymer	PA66-GF43		
Processing Hold Pressure Time (s/mm)	3		Injection
Resin Identification	PA66-GF43		ISO 1043