

3D Systems DuraForm® GF Glass Filled Nylon

Category : Polymer , Rapid Prototyping Polymer , Thermoplastic , Nylon

Material Notes:

For use with all selective laser sintering (SLS®) systems. Applications: Housings and enclosures, Consumer sporting goods. Appropriate for low- to mid-volume rapid manufacturing. Parts requiring machining or joining with adhesives. Complex production and prototype plastic parts. Form, fit, or functional prototypes. Parts requiring stiffness. Thermally stressed parts. All information provided by 3D Systems.

Order this product through the following link:

http://www.lookpolymers.com/polymer_3D-Systems-DuraForm-GF-Glass-Filled-Nylon.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.49 g/cc	1.49 g/cc	ASTM D792
Water Absorption	0.22 %	0.22 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	77	77	ASTM D2240
Tensile Strength, Ultimate	26.0 MPa	3770 psi	ASTM D638
Tensile Strength, Yield	27.0 MPa	3920 psi	ASTM D638
Elongation at Break	1.4 %	1.4 %	ASTM D638
Elongation at Yield	1.4 %	1.4 %	ASTM D638
Tensile Modulus	4.068 GPa	590.0 ksi	ASTM D638
Flexural Strength	37.0 MPa	5370 psi	ASTM D790
Flexural Modulus	3.106 GPa	450.5 ksi	ASTM D790
Izod Impact, Notched	0.410 J/cm	0.768 ft-lb/in	ASTM D256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched	1.23 J/cm	2.30 ft-lb/in	ASTM D256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Gardner Impact	4.50 J	3.32 ft-lb	ASTM D5420

Thermal Properties	Metric	English	Comments
CTE, linear	62.3 µm/m-°C	34.6 µin/in-°F	ASTM E831
	@Temperature 0.000 - 50.0 °C	@Temperature 32.0 - 122 °F	

Thermal Properties	Metric $\mu\text{m}/\text{m}-^{\circ}\text{C}$	English $\text{in}/\text{in}-^{\circ}\text{F}$	Comments
	@Temperature 85.0 - 145 $^{\circ}\text{C}$	@Temperature 185 - 293 $^{\circ}\text{F}$	ASTM E831
Specific Heat Capacity	1.09 J/g- $^{\circ}\text{C}$	0.261 BTU/lb- $^{\circ}\text{F}$	ASTM E1269
Thermal Conductivity	0.470 W/m-K	3.26 BTU-in/hr-ft ² - $^{\circ}\text{F}$	ASTM E1225
Deflection Temperature at 0.46 MPa (66 psi)	179 $^{\circ}\text{C}$	354 $^{\circ}\text{F}$	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	134 $^{\circ}\text{C}$	273 $^{\circ}\text{F}$	ASTM D648
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Volume Resistivity	3.20e+11 ohm-cm	3.20e+11 ohm-cm	ASTM D257
Surface Resistance	3.20e+11 ohm	3.20e+11 ohm	ASTM D257
Dielectric Constant	6.27	6.27	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	8.70 kV/mm	221 kV/in	ASTM D149
Dissipation Factor	0.177	0.177	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	

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