DuraForm® GF

Polyamide

3D Systems

Message:

Glass filled polyamide (nylon) material for real-world physical testing and functional use
Applications
Durable prototypes that require elevated stiffness and heat resistance
Low to mid volume direct manufacturing of end-use parts
Enclosures and housings that require more stiffness
Aircraft and motorsports parts
Sporting Goods
Features
Excellent mechanical stiffness
Elevated temperature resistance
Dimensionally stable
Compatible with autoclave sterilization
Benefits
Durable
Functional
Design for manufacturability
Eliminate tooling time and cost
Versatile application capability

General Information			
Filler / Reinforcement	Glass Fiber		
Features	Autoclave Sterilizable Durable Good Dimensional Stability High Heat Resistance High Stiffness		
Uses	Aircraft Applications Automotive Applications Housings Prototyping Sporting Goods		
Forms	Powder		
Processing Method	3D Printing, Laser Sintering/Melting		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	1.49	g/cm³	ASTM D792
Water Absorption (24 hr)	0.22	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore D)	77		ASTM D2240
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	4070	MPa	ASTM D638

Tensile Strength			ASTM D638
Yield	27.0	MPa	
Break	26.0	MPa	
Tensile Elongation			ASTM D638
Yield	1.4	%	
Break	1.4	%	
Flexural Modulus	3110	MPa	ASTM D790
Flexural Strength (Break)	37.0	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (23°C)	41	J/m	ASTM D256
Unnotched Izod Impact (23°C)	120	J/m	ASTM D256
Gardner Impact	4.50	J	ASTM D5420
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	179	°C	
1.8 MPa, Unannealed	134	°C	
CLTE - Flow			ASTM E831
0 to 50°C	8.3E-5	cm/cm/°C	
85 to 145°C	1.8E-4	cm/cm/°C	
Thermal Conductivity	0.47	W/m/K	ASTM E1225
Specific Heat Capacity	1090	J/kg/°C	ASTM E1269
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	3.2E+11	ohms	ASTM D257
Volume Resistivity	3.2E+11	ohms·cm	ASTM D257
Dielectric Strength	8.7	kV/mm	ASTM D149
Dielectric Constant (1 kHz)	6.27		ASTM D150
Dissipation Factor (1 kHz)	0.18		ASTM D150
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating	HB		UL 94

Recommended distributors for this material

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