

Proto3000 Duraform® PA Selective Laser Sintering (SLS®) Prototyping Polymer

Category : Polymer , Rapid Prototyping Polymer , Thermoplastic , Nylon

Material Notes:

Description: Durable polyamide (nylon) material for real-world physical testing and functional use
Features: Excellent surface resolution and feature detail
 Easy-to-process
 Compliant with USP Class VI testing
 Compatible with autoclave sterilization
 Good chemical resistance and low moisture absorption
Benefits: Nicely balanced mechanical properties and processability
 Build prototypes that withstand functional testing
 Produce durable end-use parts without tooling
 Create accurate and repeatable parts as demanded by manufacturers
 Machinable and paintable for demonstration parts
Applications: Complex, thin-wall ductwork- Motorsports- Aerospace
 Housings and enclosures
 Impellers and connectors
 Consumer sporting goods
 Vehicle dashboards and grilles
 Functional prototypes that approach end-use performance properties
 Appropriate for low- to mid-volume rapid manufacturing
 Medical applications requiring USP Class VI compliance, or biocompatibility
 Parts requiring machining or joining with adhesives
 Complex production and prototype plastic parts
 Form, fit, or functional prototypes
 Information provided by Proto3000 for their prototyping engineering services.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Proto3000-Duraform-PA-Selective-Laser-Sintering-SLS-Prototyping-Polymer.php

Physical Properties	Metric	English	Comments
Density	1.00 g/cc	0.0361 lb/in ³	ASTM D792
Water Absorption	0.070 % @Time 86400 sec	0.070 % @Time 24.0 hour	ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	73	73	ASTM D2240
Tensile Strength, Ultimate	43.0 MPa	6240 psi	ASTM D638
Elongation at Break	14 %	14 %	ASTM D638
Tensile Modulus	1.586 GPa	230.0 ksi	ASTM D638
Flexural Strength	48.0 MPa	6960 psi	ASTM D790
Flexural Modulus	1.387 GPa	201.2 ksi	ASTM D790
Izod Impact, Notched	0.320 J/cm	0.599 ft-lb/in	ASTM D256
Izod Impact, Unnotched	3.36 J/cm	6.29 ft-lb/in	ASTM D256
Gardner Impact	2.70 J	1.99 ft-lb	ASTM D5420

Thermal Properties	Metric	English	Comments
	62.3 µm/m-°C	34.6 µin/in-°F	

CTE linear Thermal Properties	Metric @ Temperature 0.000 - 50.0 °C	English @ Temperature 32.0 - 122 °F	ASTM E831 Comments
	124.6 µm/m-°C	69.22 µin/in-°F	ASTM E831
	@Temperature 85.0 - 145 °C	@Temperature 185 - 293 °F	
Specific Heat Capacity	1.64 J/g-°C	0.392 BTU/lb-°F	ASTM E1269
Thermal Conductivity	0.700 W/m-K	4.86 BTU-in/hr-ft²-°F	ASTM E1225
Deflection Temperature at 0.46 MPa (66 psi)	180 °C	356 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	95.0 °C	203 °F	ASTM D648
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Volume Resistivity	5.90e+13 ohm-cm	5.90e+13 ohm-cm	ASTM D257
Surface Resistance	7.00e+13 ohm	7.00e+13 ohm	ASTM D257
Dielectric Constant	2.73	2.73	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	17.3 kV/mm	439 kV/in	ASTM D149
Dissipation Factor	0.044	0.044	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	

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