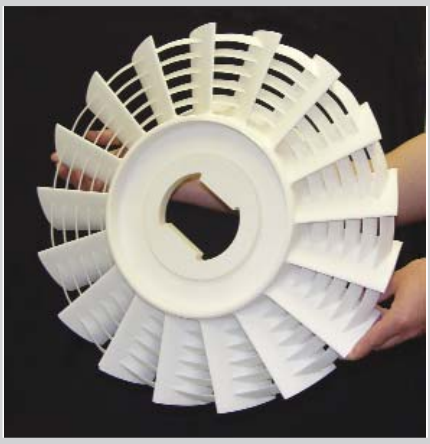
DuraForm® PA plastic

for use with all selective laser sintering (SLS®) systems

Durable polyamide (nylon) material for real-world physical testing and functional use



APPLICATIONS

- Complex, thin-wall ductwork
  - Motorsports
  - Aerospace
- Housings and enclosures
- Impellers and connectors
- Consumer sporting goods
- Vehicle dashboards and grilles
- Snap-fit designs
- 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

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

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TECHNICAL DATA

General Properties

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Specific Gravity	ASTM D792	1.00 g/cm^3	1.00 g/cm^3
Moisture Absorption - 24 hours	ASTM D570	0.07 %	0.07 %

Mechanical Properties

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Tensile Strength, Yield	ASTM D638	N/A*	N/A*
Tensile Strength, Ultimate	ASTM D638	43 MPa	6237 psi
Tensile Modulus	ASTM D638	1586 MPa	230 ksi
Elongation at Yield	ASTM D638	N/A*	N/A*
Elongation at Break	ASTM D638	14 %	14 %
Flexural Strength, Yield	ASTM D790	N/A*	N/A*
Flexural Strength, Ultimate	ASTM D790	48 MPa	6962 psi
Flexural Modulus	ASTM D790	1387 MPa	201 ksi
Hardness, Shore D	ASTM D2240	73	73
Impact Strength (notched Izod, 23°C)	ASTM D256	32 J/m	0.6 ft-lb/in
Impact Strength (unnotched Izod, 23°C)	ASTM D256	336 J/m	6.3 ft-lb/in
Gardner Impact	ASTM D5420	2.7 J	2.0 ft-lb

Thermal Properties

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Heat Deflection Temperature (HDT)	ASTM D648		
	@ 0.45 MPa	180 °C	356 °F
	@ 1.82 MPa	95 °C	203 °F
Coefficient of Thermal Expansion	ASTM E831		
	@ 0 - 50 °C	62.3 µm/m-°C	34.6 µin/in-°F
	@ 85 - 145 °C	124.6 µm/m-°C	69.2 µin/in-°F
Specific Heat Capacity	ASTM E1269	1.64 J/g-°C	0.392 BTU/lb-°F
Thermal Conductivity	ASTM E1225	0.70 W/m-K	4.86 BTU-in/hr-ft^2-°F
Flammability	UL 94	HB	HB

Electrical Properties

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Volume Resistivity	ASTM D257	5.9 x 10^{13} ohm-cm	5.9 x 10^{13} ohm-cm
Surface Resistivity	ASTM D257	7.0 X 10^{13} ohm	7.0 x 10^{13} ohm
Dissipation Factor, 1 KHz	ASTM D150	0.044	0.044
Dielectric Constant, 1 KHz	ASTM D150	2.73	2.73
Dielectric Strength	ASTM D149	17.3 kV/mm	439 kV/in

* N/A = Data not applicable for this test condition

Data was generated by building parts under typical default parameters. DuraForm PA plastic was processed on a base-level Sinterstation HiQ SLS system at 13 watts laser power, 200 inches/sec [5 m/sec] scan speed, and a powder layer thickness of 0.004 inches [0.1 mm].

TRANSFORM YOUR PRODUCTS

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