

3D Systems DuraForm® PA Nylon for SLS® Systems

Category : Polymer , Rapid Prototyping Polymer , Thermoplastic , Nylon

Material Notes:

For use with all selective laser sintering (SLS®) systems. 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. All information provided by 3D Systems.

Order this product through the following link:

http://www.lookpolymers.com/polymer_3D-Systems-DuraForm-PA-Nylon-for-SLS-Systems.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.00 g/cc	1.00 g/cc	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 @Temperature 23.0 °C	0.599 ft-lb/in @Temperature 73.4 °F	ASTM D256
Izod Impact, Unnotched	3.36 J/cm @Temperature 23.0 °C	6.29 ft-lb/in @Temperature 73.4 °F	ASTM D256
Gardner Impact	2.70 J	1.99 ft-lb	ASTM D5420

Thermal Properties	Metric	English	Comments
CTE, linear	82.6 µm/m-°C @Temperature 0.000 - 50.0 °C	45.9 µin/in-°F @Temperature 32.0 - 122 °F	ASTM E831
	179.2 µm/m-°C	99.56 µin/in-°F	

Thermal Properties	Metric @ Temperature 85.0 - 145 °C	English @ Temperature 185 - 293 °F	Comments
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 @Frequency 1000 Hz	2.73 @Frequency 1000 Hz	ASTM D150
Dielectric Strength	17.3 kV/mm	439 kV/in	ASTM D149
Dissipation Factor	0.044 @Frequency 1000 Hz	0.044 @Frequency 1000 Hz	ASTM D150

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