

PA - Specifications

Description

This material has excellent surface resolution and is very easy to process. It is USP Class VI compliant and is compatible with autoclave sterilization. It has good chemical resistance and low moisture absorption. It produces accurate, durable and repeatable end-use parts without tooling as demanded by the manufacturers.

Thermal Properties*

Heat deflection temperature ASTM D-648 @66 psi	356°F
Coefficient of thermal expansion ASTM E-381 @0-50°C	45.9x10 ⁻⁶ /°F
Specific heat capacity ASTM E-1269	0.392 BTU/lb.-°F
Thermal conductivity ASTM E-1225	4.86 BTU-in./hr-ft.2-°F
Flammability UL 94	HB

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Electrical Properties*

Volume resistivity ASTM D-257	5.9 x 10 ¹³ ohm-cm
Surface resistivity ASTM D-257	7.0 x 10 ¹³ ohm
Dissipation factor, 1KHz ASTM D-150	0.044
Dielectric constant, 1KHz ASTM D-150	2.73
Dielectric strength ASTM D-149	439 kV/in.

General Properties*

Appearance	White
Specific gravity ASTM D-792	1.00 g/cm ³
Moisture absorption, 24 hours ASTM D-570	0.07%

*Data was generated by building parts under typical default parameters. PA 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].

Applications

- Thin-wall ductwork for Aerospace and Motorsports
- Snap-fit parts
- Vehicle dashboard and grilles
- Housings, enclosures, impellers and connectors
- Consumer sporting goods
- Functional prototypes that approach end-use performance properties
- Low to mid-volume rapid manufacturing
- Medical applications requiring USP Class VI compliance, or bio-compatibility
- Parts requiring machining or joining with adhesives
- Production and prototype plastic parts
- Form, fit, or functional prototypes

Mechanical Properties*

Hardness ASTM D-2240	73 Shore D
Flexural modulus ASTM D-790	201 ksi
Flexural strength, Ultimate ASTM D-790	6,962 psi
Tensile modulus ASTM D-638	230 ksi
Tensile strength, Ultimate ASTM D-638	6,237 psi
Elongation at break ASTM D-638	14%
Impact strength, Notched Izod ASTM D-256	0.6 ft.- lb./in.
Impact strength, Unnotched Izod ASTM D-256	6.3 ft.- lb./in.
Gardner Impact ASTM D-5420	2.0 ft.- lb.

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