goengineer

PPSF

PRODUCTION-GRADE THERMOPLASTIC FOR FORTUS 3D PRINTERS

PPSF/PPSU (polyphenylsulfone) material has the greatest heat and chemical resistance of all Fortus® materials - ideal for aerospace, automotive and medical applications. PPSF parts manufactured on Fortus 3D Printers are not only mechanically superior, but also dimensionally accurate, to better predict end-product performance. Users can also sterilize PPSF via steam autoclave, EtO sterilization, plasma sterilization, chemical sterilization and radiation*. PPSF gives you the ability to manufacture parts direct from digital files that are ideal for conceptual modeling, functional prototyping, manufacturing tools and production parts.

MECHANICAL PROPERTIES[1]	TEST METHOD	ENGLISH	METRIC
Tensile Strength (Type 1, 0.125”, 0.2”/min)	ASTM D638	8,000 psi	55 MPa
Tensile Modulus (Type 1, 0.125”, 0.2”/min)	ASTM D638	300,000 psi	2,100 MPa
Tensile Elongation (Type 1, 0.125”, 0.2”/min)	ASTM D638	3%	3%
Flexural Strength (Method 1, 0.05”/min)	ASTM D790	15,900 psi	110 MPa
Flexural Modulus (Method 1, 0.05”/min)	ASTM D790	320,000 psi	2,200 MPa
IZOD Impact, notched (Method A, 23 °C)	ASTM D256	1.1 ft-lb/in	58.7 J/m
IZOD Impact, un-notched (Method A, 23 °C)	ASTM D256	3.1 ft-lb/in	165.5 J/m

THERMAL PROPERTIES[3]	TEST METHOD	ENGLISH	METRIC
Heat Deflection (HDT) @ 264 psi	ASTM D648	372 °F	189 °C
Glass Transition Temperature (Tg)	DMA (SSYS)	446 °F	230 °C
Coefficient of Thermal Expansion	ASTM D696	$3.1x10^{-05}$ in/in/°F	$5.5x10^{-05}$ mm/mm/°C
Melting Point	- - - - - - - - -	Not Applicable[2]	Not Applicable[2]

ELECTRICAL PROPERTIES[4]	TEST METHOD	VALUE RANGE
Volume Resistivity	ASTM D257	$1.5x10^{14}$ - $5.0x10^{13}$ ohm-cm
Dielectric Constant	ASTM D150-98	3.2 - 3.0
Dissipation Factor	ASTM D150-98	.0015 - .0011
Dielectric Strength	ASTM D149-09, Method A	290 - 80 V/mil

goengineer
www.goengineer.com

3D PRINTER SALES
info@goengineer.com
800.688.3234

CONSUMABLES HELP
supplies@goengineer.com
855.470.0647

3D PRINTER SUPPORT
AMsupport@goengineer.com
855.470.0647

PPSF

PRODUCTION-GRADE THERMOPLASTIC FOR FORTUS 3D PRINTERS

At the core: Advanced FDM Technology

FDM® (fused deposition modeling) technology works with engineering-grade thermoplastics to build strong, long-lasting and dimensionally stable parts with the best accuracy and repeatability of any 3D printing technology. These parts are tough enough to be used as advanced conceptual models, functional prototypes, manufacturing tools and production parts.

Meet production demands

FDM systems are as versatile and durable as the parts they produce. Advanced FDM 3D Printers boast the largest build envelopes and material capacities in their class, delivering longer, uninterrupted build times, bigger parts and higher quantities than other additive manufacturing systems, delivering high throughput, duty cycles and utilization rates.

Opening the way for new possibilities

FDM 3D Printers streamline processes from design through manufacturing, reducing costs and eliminating traditional barriers along the way. Industries can cut lead times and costs, products turn out better and get to market faster.

No special facilities needed

FDM 3D Printers are easy to operate and maintain compared to other additive fabrication systems because there are no messy powders or resins to handle and contain, and no special venting is required because FDM systems don't produce noxious fumes, chemicals or waste.

ENVIRONMENTAL RESISTANCE[5]	24 HOURS @ 23 °C (73 °F)	24 HOURS @ 100 °C (212 °F)
Antifreeze (Prestone), 50%	Passed	Passed
Gasoline-Unleaded	Passed	Not tested
Motor Oil 10W-40	Passed	Passed
Power Steering Fluid	Passed	Passed
Transmission Fluid	Passed	Passed
Windshield Washer Fluid, 50%	Passed	Not tested

OTHER[3]	TEST METHOD	VALUE
Specific Gravity	ASTM D792	1.28
Rockwell Hardness	ASTM D785	M86

SYSTEM AVAILABILITY	LAYER THICKNESS CAPABILITY	SUPPORT STRUCTURE	AVAILABLE COLORS
Fortus 900mc™	0.013 inch (0.330 mm) 0.010 inch (0.254 mm)[6]	Breakaway	Tan

The information presented are typical values intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. End-use material performance can be impacted (+/-) by, but not limited to, part design, end-use conditions, test conditions, etc. Actual values will vary with build conditions. Tested parts were built on Fortus 400mc™ @ 0.010" (0.254 mm) slice. Product specifications are subject to change without notice.

The performance characteristics of these materials may vary according to application, operating conditions, or end use. Each user is responsible for determining that the Stratasys material is safe, lawful, and technically suitable for the intended application, as well as for identifying the proper disposal (or recycling) method consistent with applicable environmental laws and regulations. Stratasys makes no warranties of any kind, express or implied, including, but not limited to, the warranties of merchantability, fitness for a particular use, or warranty against patent infringement.

**Stratasys has not done any sterilization testing on PPSF.*

[1] Build orientation is on side long edge.

[2] Due to amorphous nature, material does not display a melting point.

[3] Literature value unless otherwise noted.

[4] All Electrical Property values were generated from the average of test plaques built with default part density (solid). Test plaques were 4.0 x 4.0 x 0.1 inches (102 x 102 x 2.5 mm) and were built both in the flat and vertical orientation. The range of values is mostly the result of the difference in properties of test plaques built in the flat vs. vertical orientation.

[5] Test results based on Stress Crack Resistance (24-hour immersion @ 23 °C and @ 100 °C).

[6] 0.013 inch (0.330 mm) layer thickness not available on Fortus 900mc.