

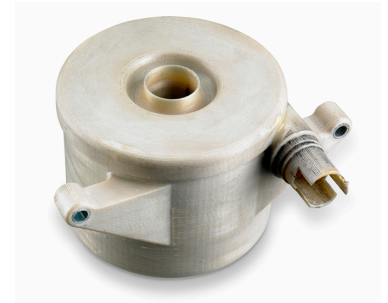
PPSF

for Fortus 3D Production Systems



PARTS FOR PROTOTYPE AND PRODUCTION • ON DEMAND

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 Production Systems 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 Real Parts™ direct from digital files that are ideal for conceptual modeling, functional prototyping, manufacturing tools, and end-use-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

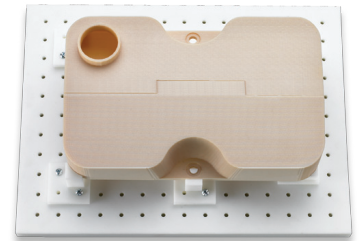
Thermal Properties ³	Test Method	English	Metric
Heat Deflection (HDT) @ 264 psi	ASTM D648	372°F	189°C
Glass Transition Temperature (Tg)	DMA (SSYS)	446°F	230°C
Coefficient of Thermal Expansion	ASTM D696	3.1 E -05 in/in/°F	5.5 E -05 mm/mm/°C
Melt Point	-----	Not Applicable ²	Not Applicable ²

Electrical Properties ⁴	Test Method	Value Range
Volume Resistivity	ASTM D257	1.5x10e14 - 5.0 x 10e13 ohms
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/mm
Dielectric Strength	IEC 60112	14.6 kV/mm
Dielectric Constant @ 60 Hz	IEC 60250	3.45

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
Flame Classification	UL 94	V0 (0.126", 3.2 mm)
Rockwell Hardness	ASTM D785	M86

System Availability	Layer Thickness Capability	Support Structure	Available Colors
Fortus 400mc Fortus 900mc	0.013 inch (0.330 mm) 0.010 inch (0.254 mm) ⁶	BASS	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.

*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.

⁴All 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.

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

⁶0.013 inch (0.330 mm) layer thickness not available on Fortus 900mc.

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