ABS-M30i

Production-Grade Thermoplastic for Fortus 3D Production Systems

ABS-M30i is a high strength material well suited for the medical, pharmaceutical and food packaging industries. Parts manufactured with ABS-M30i material are biocompatible (ISO 10993 USP Class VI)* and can be gamma or EtO sterilized. When combined with Fortus® 3D Production Systems, ABS-M30i gives you biocompatible Real Parts™ with excellent mechanical properties that are well suited for conceptual modeling, functional prototyping, manufacturing tools, and end-use-parts.

Mechanical Properties[2]	Test Method	English	Metric
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	5,200 psi	36 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	350,000 psi	2,400 MPa
Tensile Elongation (Type 1, 0.125", 0.2"/min)	ASTM D638	4%	4%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	8,800 psi	61 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	336,000 psi	2,300 MPa
IZOD Impact, notched (Method A, 23°C)	ASTM D256	2.6 ft-lb/in	139 J/m
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	5.3 ft-lb/in	283 J/m

Thermal Properties[2]	Test Method	English	Metric
Heat Deflection (HDT) @ 66 psi, 0.125" unannealed	ASTM D648	204°F	96°C
Heat Deflection (HDT) @ 264 psi, 0.125" unannealed	ASTM D648	180°F	82°C
Vicat Softening Temp. (Rate B/50)	ASTM D1525	210°F	99°C
Coefficient of Thermal Expansion (flow)	ASTM E831	4.9E-05 in/in/°F	8.82E-05 mm/mm/°C
Coefficient of Thermal Expansion (xflow)	ASTM E831	4.7E-05 in/in/°F	8.46E-05 mm/mm/°C
Glass Transition (Tg)	DSC (SSYS)	226°F	108°C
Melt Point	- - - - - - - - -	Not Applicable[3]	Not Applicable[3]

Electrical Properties[4]	Test Method	Value Range
Volume Resistivity	ASTM D257	1.5x10e14-6.0x10e13 ohm-cm
Dielectric Constant	ASTM D150-98	2.9 - 2.7
Dissipation Factor	ASTM D150-98	.0053 - .0051
Dielectric Strength	ASTM D149-09, Method A	370 - 80 V/mil

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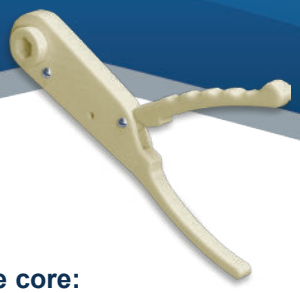

Other[2]	Test Method	Value
Specific Gravity	ASTM D792	1.04
Flame Classification	UL94	HB (0.06", 1.5 mm)
Rockwell Hardness	ASTM D785	109.5

System Availability	Layer Thickness Capability	Support Structure	Available Colors
Fortus 400mc	0.013 inch (0.330 mm)	Soluble Supports	☐ Ivory
Fortus 900mc	0.010 inch (0.254 mm)		
	0.007 inch (0.178 mm)		
	0.005 inch (0.127 mm)[5]		

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.

**It is the responsibility of the finished device manufacturer to determine the suitability of all the component parts and materials used in their finished products.*

[1]*Build orientation is on side long edge.*

[2]*Literature value unless otherwise noted.*

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

[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] *0.005 inch (0.127 mm) layer thickness not available for Fortus 900mc*

At the core: Advanced FDM Technology™

Fortus systems are based on patented Stratasys FDM (Fused Deposition Modeling) technology. FDM is the industry's leading additive manufacturing technology, and the only one that uses production grade thermoplastics, enabling the most durable parts.

Fortus systems use a wide range of thermoplastics with advanced mechanical properties so your parts can endure high heat, caustic chemicals, sterilization, and high impact applications.

No special facilities needed

You can install a Fortus 3D Production System just about anywhere. No special venting is required because Fortus systems don't produce noxious fumes, chemicals, or waste.

No special skills needed

Fortus 3D Production Systems are easy to operate and maintain compared to other additive fabrication systems because there are no messy powders or resins to handle and contain. They're so simple, an operator can be trained to operate a Fortus system in less than 30 minutes.

Get your benchmark on the future of manufacturing

Fine details. Smooth surface finishes. Accuracy. Strength. The best way to see the advantages of a Fortus 3D Production System is to have your own part built on a Fortus system. Get your free part at: stratasys.com.

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