ABS-M30i

PRODUCTION-GRADE THERMOPLASTIC FOR FORTUS 3D PRINTERS

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 Printers, ABS-M30i gives you biocompatible parts with excellent mechanical properties that are well suited 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	4,650 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	$4.9x10^{-05}$ in/in/°F	$8.82x10^{-05}$ mm/mm/°C
Coefficient of Thermal Expansion (xflow)	ASTM E831	$4.7x10^{-05}$ in/in/°F	$8.46x10^{-05}$ mm/mm/°C
Glass Transition (Tg)	DSC (SSYS)	226 °F	108 °C
Melting Point	- - - - - - - - -	Not Applicable[3]	Not Applicable[3]

ELECTRICAL PROPERTIES[4]	TEST METHOD	VALUE RANGE
Volume Resistivity	ASTM D257	$1.5x10^{14}$ - $6.0x10^{13}$ 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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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.

OTHER[2]	TEST METHOD	VALUE
Specific Gravity	ASTM D792	1.04
Rockwell Hardness	ASTM D785	109.5
Food Safety Certification	NSF 51	Certified

SYSTEM AVAILABILITY	LAYER THICKNESS CAPABILITY	SUPPORT STRUCTURE	AVAILABLE COLORS
Fortus 380mc™ Fortus 450mc™ Fortus 900mc™	0.013 inch (0.330 mm) 0.010 inch (0.254 mm) 0.007 inch (0.178 mm) 0.005 inch (0.127 mm)[5]	Soluble Supports	☐ Ivory

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

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