



# ABS-M30i™

## MATERIAL DATA SHEET



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. ABS-M30i gives you biocompatible parts with excellent mechanical properties that are well suited for conceptual modeling, functional prototyping, manufacturing tools and end-use-parts.

*Quick Facts:*

- *Biocompatible*
- *Medical & Food industry compliant*
- *Excellent mechanical properties*

*Color options:*

Ivory



MECHANICAL PROPERTIES	TEST METHOD	ENGLISH		METRIC	
		XZ AXIS	ZX AXIS	XZ AXIS	ZX AXIS
Tensile Strength, Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	4,550 psi	3,750 psi	31 MPa	26 MPa
Tensile Strength, Ultimate (Type 1, 0.125", 0.2"/min)	ASTM D638	4,650 psi	4,050 psi	32 MPa	28 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	320,000 psi	310,000 psi	2,230 MPa	2,180 MPa
Tensile Elongation at Break (Type 1, 0.125", 0.2"/min)	ASTM D638	7%	2%	7%	2%
Tensile Elongation at Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	2%	1%	2%	1%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	8,700 psi	7,000 psi	60 MPa	48MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	300,000 psi	250,000 psi	2,060 MPa	1,760 MPa

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Materials and data based on Stratasys FDM material product testing reports.

# ABS-M30i

MECHANICAL PROPERTIES	TEST METHOD	ENGLISH		METRIC	
		XZ AXIS	ZX AXIS	XZ AXIS	ZX AXIS
Flexural Strain at Break (Method 1 0.05"/min)	ASTM D790	4%	3.5%	4%	3.5%
IZOD Impact notched (Method A, 23°C)	ASTM D256	2.4 ft-lb/in		128 J/m	
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	5.6 ft-lb/in		300 J/m	

THERMAL PROPERTIES	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 Temperature (Rate B/50)	ASTM D1525	210° F	99° C
Glass Transition (Tg)	DSC (SSYS)	226° F	108° C
Coefficient of Thermal Expansion (flow)	ASTM E831	4.90-05in/in/° F	8.82-05mm/mm/°C
Coefficient of Thermal Expansion (xflow)	ASTM E831	4.70-05in/in/° F	8.46-05mm/mm/°C
Melting Point	-----	Not Applicable	Not Applicable

ELECTRICAL PROPERTIES	TEST METHOD	ORIENTATION	VALUE RANGE
Volume Resistivity	ASTM D257	XZ Axis	4.0-15 - 3.3-16 ohm-cm
Dielectric Constant	ASTM D150-98	XZ Axis	2.6 - 2.86
Dissipation Factor	ASTM D150-98	XZ Axis	0.0048 - 0.0054
Dielectric Strength	ASTM D149-09, Method A	XZ Axis	100 V/mil
Dielectric Strength	ASTM D149-09 Method A	ZX Axis	360 V/mil

OTHER	TEST METHOD	VALUE
Specific Gravity	ASTM D792	1.04
Flame Classification	UL94	HB (0.09", 2.50 mm)
Rockwell Hardness	ASTM D785	109.5

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