

Technical Data Sheet

Eastman Amphora™ Flex 3D Polymer FL6000

Application/Uses

- Production of 3D Printing filaments

Key Attributes

- Dimensional stability
- Enhanced aesthetics
- Excellent Temperature Resistance
- Excellent toughness
- Extended Processing Window
- Low odor
- Property retention in 3D applications
- Steam Sterilizable
- Styrene-free
- Workability

Product Description

Eastman Amphora™ Flex 3D polymer FL6000, a flexible material uniquely engineered for extrusion-based additive manufacturing processes. Amphora Flex FL6000 is a polymer that can be used with standard 3D printers—eliminating the need to switch to specialized flex extruders. Thanks to exceptional layer-to-layer adhesion and melt strength, it prints at a faster speed than other elastomeric materials, saving you time. Amphora Flex FL6000 is an engineering-grade material that demonstrates superior durability and toughness, enabling designers to quickly create truly functional parts that can withstand the rigors of everyday use. Amphora Flex FL6000 is highly useful for applications that demand both the durability of an engineering-grade polymer and the comfort and utility of a flexible material. With a Shore A hardness level of 95, outstanding chemical resistance, and a temperature resistance that allows steam sterilization, users may find it to be the ideal polymer for additive manufacturing of prosthetics, orthotics, automotive parts, apparel, tooling, or a variety of consumer products.

Typical Properties

Property ^a	Test ^b Method	Typical Value, Units ^c
General Properties		
Specific Gravity	D 792	1.13 g/cm ³
Mechanical Properties		
Tensile Stress @ Yield	D 638	14 MPa (2030 psi)
Tensile Stress @ Break	D 638	22 MPa (3200 psi)
Elongation @ Yield	D 638	38%
Elongation @ Break	D 638	400%
Flexural Modulus	D 790	150 MPa (21750 psi)
Tear Strength	D 1004	350 N (79 lbf)
Durometer Hardness		
Shore D Scale	D 2240	55

Shore A Scale	D 2240	95
Izod Impact Strength, Notched @ -40°C (-40°F)	D 256	40 J/m (0.75 ft·lbf/in.)

Thermal Properties

Brittleness Temperature	D 746	<-70°C (<-103°F)
Vicat Softening Temperature @ 1 kg load	D 1525	170°C (338°F)

Typical Processing Conditions

Processing Melt Temperature	240-260°C
Heated Bed Temperature ^d	80°C
Cooling	0 to 50%
Layer Height	0.1 or 0.2 mm
Speed	30 to 50 mm/s
Infill	As needed up to 100%
Perimeter	Around 1 mm
Minimal Layer Time	5 sec

^a Unless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.

^b Unless noted otherwise, the test method is ASTM.

^c Units are in SI or US customary units.

^d Will most of the time require BuildTak(TM) support to promote the best adhesion.

Comments

Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.

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