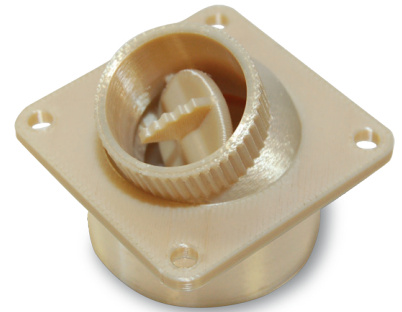


# ULTEM\* 9085

ULTEM\* 9085 is a flame retardant high performance thermoplastic for direct digital manufacturing and rapid prototyping. It is ideal for the transportation industry due to its high strength-to-weight ratio and its FST (flame, smoke, and toxicity) rating. This unique material's preexisting certifications make it an excellent choice for the commercial transportation industry – especially aerospace, marine and ground vehicles. Combined with a Fortus® 3D Production System, ULTEM 9085 allows design and manufacturing engineers to produce fully functional parts that are ideal for advanced functional prototypes or end use without the cost or lead time of traditional tooling.



Mechanical Properties <sup>1</sup>	Test Method	English	Metric
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	10,400 psi	71.6 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	322 kpsi	2,200 MPa
Tensile Elongation (Type 1, 0.125", 0.2"/min)	ASTM D638	6%	6%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	16,700 psi	115.1 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	362.6 kpsi	2,500 MPa
IZOD Impact, notched (Method A, 23°C)	ASTM D256	2.0 ft-lb f/in	106 J/m
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	11.5 ft-lb f/in	613.8 J/m

Thermal Properties <sup>2</sup>	Test Method	English	Metric
Heat Deflection (HDT) @ 66 psi, 0.125" unannealed	-----	-----	-----
Heat Deflection (HDT) @ 264 psi, 0.125" unannealed	ASTM D648	307 °F	153°C
Glass Transition Temperature (Tg)	DSC (SSYS)	367°F	186°C
Coefficient of Thermal Expansion	-----	-----	-----
Melt Point	-----	Not Applicable <sup>3</sup>	Not Applicable <sup>3</sup>

Electrical Properties <sup>4</sup>	Test Method	Value Range
Volume Resistivity	ASTM D257	1.0 x 10e14 - 6.0 x 10e13 ohms
Dielectric Constant	ASTM D150-98	3.2 - 3.0
Dissipation Factor	ASTM D150-98	.0027 - .0026
Dielectric Strength	ASTM D149-09, Method A	290 - 110 V/mm

Other <sup>2</sup>	Test Method	Value
Specific Gravity	ASTM D792	1.34
Rockwell Hardness	ASTM D785	---
Flame Classification	UL94	---
Oxygen Index	ASTM D2863	0.49
Vertical Burn	FAR 25.853 (Test a (60s), passes at)	2 seconds
FAA Flammability	FAR 25.853 (Method A/B)	< 5
OSU Total Heat Release (5 min test)	FAR 25.853	36 kW/m <sup>2</sup>
OSU Total Heat Release (2 min test)	FAR 25.853	16 kW min/m <sup>2</sup>



System Availability	Layer Thickness Capability	Support Structure	Available Colors
Fortus 400mc Fortus 900mc	0.013 inch (0.330 mm) <sup>5</sup> 0.010 inch (0.254 mm)	BASS	■ Tan

The information presented in this document 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.

<sup>1</sup>Build orientation is on side long edge.

<sup>2</sup>Literature value unless otherwise noted.

<sup>3</sup>Due to amorphous nature, material does not display a melting point.

<sup>4</sup>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.

<sup>5</sup>0.013 inch (0.300 mm) layer thickness not available for Fortus 400mc

## 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

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For more information about Fortus systems, materials and applications, call **888.480.3548** or visit [www.fortus.com](http://www.fortus.com)

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