

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	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	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 Applicable3	Not Applicable3

ELECTRICAL PROPERTIES	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 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 ²
OSU Total Heat Release (2 min test)	FAR 25.853	16 kW min/m ²

SYSTEM AVAILABILITY	LAYER THICKNESS CAPABILITY	SUPPORT STRUCTURE	AVAILABLE COLORS
Fortus 900mc	0.013 inch (0.330 mm)	BASS	Tan
	0.010 inch (0.254 mm)		

Actual part properties may vary slightly from those listed above based on processing parameters, operating conditions, and material usage. Forecast3D makes no warranties of materials for any particular application, nor does it make a warranty of any type, expressed or implied, including, but not limited to, the warranties of merchantability for a particular purpose.

Forecast3D is a world class Rapid Manufacturing facility located in Carlsbad CA specializing in high-quality rapid prototyping, 3D printing (SLA, SLS, FDM, Objet, and DMLS), short-run manufacturing and CNC machining, and is well known for its unique ProCAST RTV & Hybrid Tooling capabilities.