

ULTEM® 9085 (FDM)

a Stratasys Material

CERTIFIED, HIGH-PERFORMANCE FDM THERMOPLASTIC

ULTEM 9085 resin material lets manufacturers create functional prototypes and production parts for high-strength, FST-rated and certified applications.



Colors Available



Natural



Black

Mechanical Properties ¹	Test Method	Result
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	69 MPa • 9950 psi
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	2,150 MPa • 312,000 psi
Tensile Elongation (Type 1, 0.125", 0.2"/min)	ASTM D638	5.8%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	112 MPa • 16,200 psi
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	2,300 MPa • 331,000 psi
IZOD Impact, notched (Method A, 23°C)	ASTM D256	120 J/m • 2.2 ft-lb f/in
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	781J/m • 14.6 ft-lb f/in
Compression Strength	ASTM D695	181 MPa • 26,200 psi
Compression Modulus	ASTM D732	7,012 MPa • 1,030,000 psi

Thermal Properties ²	Test Method	Result
Heat Deflection (HDT) @ 264 psi, 0.125" unannealed	ASTM D648	153 °C - 307 °F
Glass Transition (Tg)	DSC (SSYS)	153 °C - 367°F
Coefficient of Thermal Expansion	ASTM E228	65.27 µm/(m·°C) - 3.67e-05 in/(in·F°)

¹ Build orientation is on side long edge.

² Literature values unless otherwise noted.

³ All Electrical Property values were generated from the average of test plaques built with the 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.

Intek Plastics makes no warranties of the 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.

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Electrical Properties ³	Test Method	Result
Volume Resistivity	ASTM D257	4.9 x 10e15 • 8.2 x 10e15 ohms
Dielectric Constant	ASTM D150-98	3.0 - 3.2
Dissipation Factor	ASTM D150-98	.0025 - .0027
Dielectric Strength	ASTM D149-09, Method A	110 - 290 V/mil

Other ²	Test Method	Result
Specific Gravity	ASTM D792	1.34
Flame Classification	UL94	V-0
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
UL File Number	N/A	E345258
Fungus Resistance (Method 508.6)	MIL-STD-810G	Passed

Outgassing	Test Method	Result
Total Mass Loss (TML)	ASTM E595	0.41% (1.00% maximum)
Collected Volatile Condensable Material (CVCM)	ASTM E595	-0.1% (0.10% maximum)
Water Vapor Recovered (WVR)	ASTM E595	-0.37% (report)

Burn Testing	Test Method	Result
Vertical Burn (60 sec)	FAR 25.853	Passed (0.040" - 0.250" thick)
Heat Release 65/65	FAR 25.853	Passed (<40HR Peak, 0.060" thick)
NBS Smoke Density (flaming)	ASTM F814/E662	Passed
NBS Smoke Density (non-flaming)	ASTM F814/E662	Passed

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