

## Product Data Sheet

# Somos<sup>®</sup> DMX 100

### Description

Somos<sup>®</sup> DMX 100 by DSM Functional Materials is an extremely durable stereolithography (SL) resin that produces very accurate parts with high feature detail. Based on a new chemistry platform that gives the material high impact resistance similar to thermoplastics, DMX-SL is a breakthrough in stereolithography resin technology. It facilitates the production of tough, complex parts can be built with a superb surface finish.

### Applications

Somos<sup>®</sup> DMX 100 produces parts that are much more resistant to breakage than parts made with standard SL resins. It is ideal for use in functional testing applications, as well as low-volume manufacturing applications where toughness is required. Market segments include aerospace, automotive, consumer products and electronics.

This resin is ideal for functional end-use performance prototypes such as: snap-fit designs, impellers, duct work, connectors and electronic covers, automotive housings and dashboard assemblies, packaging and sporting goods.

#### TECHNICAL DATA - LIQUID PROPERTIES

Appearance	Off White
Viscosity	~1,500 cps @ 30°C
Density	~1.17 g/cm <sup>3</sup> @ 25°C

#### TECHNICAL DATA - OPTICAL PROPERTIES

E <sub>c</sub>	15.0 mJ/cm <sup>2</sup>	[critical exposure]
D <sub>p</sub>	5.50 mils	[slope of cure-depth vs. ln (E) curve]
E <sub>10</sub>	92 mJ/cm <sup>2</sup>	[exposure that gives 0.254 mm (.010 inch) thickness]

TECHNICAL DATA			
Mechanical Properties		Somos® DMX 100 UV Postcure	
ASTM Method	Property Description	Metric	Imperial
D638M	Tensile Modulus	2,260 - 2,560 MPa	327 - 371 ksi
D638M	Tensile Strength at Break	29.7 - 32.1 MPa	4.3 - 4.7 ksi
D638M	Tensile Strength at Yield	44.1 - 45.5 MPa	6.4 - 6.6 ksi
D638M	Elongation at Break	12 - 28%	12 - 28%
D638M	Elongation at Yield	4%	4%
D638M	Poisson's Ratio	0.40 - 0.42	0.40 - 0.42
D790M	Flexural Strength	68.0 MPa	9.8 - 9.9 ksi
D790M	Flexural Modulus	2,280 - 2,300 MPa	331 - 333 ksi
D2240	Hardness (Shore D)	80	80
D256A	Izod Impact (Notched)	0.61 - 0.71 J/cm	1.15 - 1.32 ft-lb/in
D624	Tear Strength	1.1 SI	1.1 SI
D570-98	Water Absorption	0.82 - 0.85%	0.82 - 0.85%

TECHNICAL DATA			
Thermal/Electrical Properties		Somos® DMX 100 UV Postcure	
ASTM Method	Property Description	Metric	Imperial
E831-05	C.T.E. -40 - 0°C (-40 - 32°F)	83.8 - 85.2 µm/m°C	46.6 - 47.3 µin/in°F
E831-05	C.T.E. 0 - 50°C (32 - 122°F)	124.0 - 134.1 µm/m°C	68.9 - 74.5 µin/in°F
E831-05	C.T.E. 50 - 100°C (122 - 212°F)	181.2 - 185.3 µm/m°C	100.7 - 102.9 µin/in°F
E831-05	C.T.E. 100 - 150°C (212 - 302°F)	178.4 - 179.9 µm/m°C	99.1 - 99.9 µin/in°F
D150-98	Dielectric Constant 60 Hz	4.3	4.3
D150-98	Dielectric Constant 1 KHz	3.9	3.9
D150-98	Dielectric Constant 1 MHz	3.7	3.7
D149-97A	Dielectric Strength	14.1 - 15.8 kV/mm	357 - 400 V/mil
E1545-00	Tg	37°C	99°F
D648	HDT @ 0.46 MPa (66 psi)	44°C	112°F
D648	HDT @ 1.81 MPa (264 psi)	41°C	106°F

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