

## Product Data

# Somos<sup>®</sup> BioClear

### Description

DSM's Somos<sup>®</sup> BioClear produces clear, strong, tough and water-resistant parts. This product is the first in the Somos<sup>®</sup> BioLine portfolio for medical applications and is ISO 10993-5, ISO 10993-10 and USP VI certified.

### Applications

Somos<sup>®</sup> BioClear is designed for medical applications that are non-implant and have limited contact with the body, such as dental drill guides and device prototyping.\*\*

#### TECHNICAL DATA - LIQUID PROPERTIES

Appearance	Optically clear, near colorless
Viscosity	~260 cps @ 30°C
Density	~1.12 g/cm <sup>3</sup> @ 25°C

#### TECHNICAL DATA - OPTICAL PROPERTIES

E <sub>c</sub>	11.5 mJ/cm <sup>2</sup>	[critical exposure]
D <sub>p</sub>	6.50 mils	[slope of cure-depth vs. ln (E) curve]
E <sub>10</sub>	54 mJ/cm <sup>2</sup>	[exposure that gives 0.254 mm (.010 inch) thickness]

\*\* The parameters for medical testing are limited. It remains the responsibility of the device manufacturers to determine the usage fit for each particular device.

TECHNICAL DATA			
Mechanical Properties		Somos <sup>®</sup> BioClear UV Postcure	
ASTM Method	Property Description	Metric	Imperial
D638M	Tensile Strength at Break	47.1 - 53.6 MPa	6.8 - 7.8 ksi
D638M	Elongation at Break	11 - 20%	11 - 20%
D638M	Elongation at Yield	3%	3%
D638M	Modulus of Elasticity	2,650 - 2,880 MPa	384 - 420 ksi
D790M	Flexural Strength	63.1 - 74.2 MPa	9.2 - 10.8 ksi
D790M	Flexural Modulus	2,040 - 2,370 MPa	296 - 344 ksi
D256A	Izod Impact (Notched)	0.2 - 0.3 J/m	0.4 - 0.6 ft-lb/in
D542	Index of Refraction	1.512 - 1.515	1.512 - 1.515
D1004-09	Graves Tear	150,288 N/m	833 - 858 ft-lb/in
D570-98	Water Absorption	0.35%	0.35%

TECHNICAL DATA			
Thermal/ Electrical Properties		Somos <sup>®</sup> BioClear UV Postcure	
ASTM Method	Property Description	Metric	Imperial
E831-05	C.T.E. -40 - 0°C (-40 - 32°F)	66 - 67 $\mu\text{m}/\text{m}^{\circ}\text{C}$	37 $\mu\text{in}/\text{in}^{\circ}\text{F}$
E831-05	C.T.E. 0 - 50°C (32 - 122°F)	90 - 96 $\mu\text{m}/\text{m}^{\circ}\text{C}$	50 - 53 $\mu\text{in}/\text{in}^{\circ}\text{F}$
E831-05	C.T.E. 50 - 100°C (122 - 212°F)	170 - 189 $\mu\text{m}/\text{m}^{\circ}\text{C}$	94 - 105 $\mu\text{in}/\text{in}^{\circ}\text{F}$
E831-05	C.T.E. 100 - 150°C (212 - 302°F)	185 - 189 $\mu\text{m}/\text{m}^{\circ}\text{C}$	103 - 105 $\mu\text{in}/\text{in}^{\circ}\text{F}$
D150-98	Dielectric Constant 60 Hz	3.9 - 4.1	3.9 - 4.1
D150-98	Dielectric Constant 1 KHz	3.7 - 3.9	3.7 - 3.9
D150-98	Dielectric Constant 1 MHz	3.4 - 3.5	3.4 - 3.5
D149-97A	Dielectric Strength	15.4 - 16.3 kV/mm	390 - 413 V/mil
E1545-00	Tg	39 - 46°C	102 - 109°F
D648	HDT @ 0.46 MPa (66 psi)	45.9 - 54.5°C	115 - 130°F
D648	HDT @ 1.81 MPa (264 psi)	49.0 - 49.7°C	120°F

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