Somos® BioClear

Surgeons can now use clear, customizable cutting guides to ensure proper placement and perform faster, more accurate procedures. Not only will this decrease the recovery times for patients, it can also lessen the chances for a repeat procedure—lowering the burden for the facility, surgeon, and patient.

Somos® BioClear is the material for printing clear guides and models with peace of mind. It is ideal for small run, customized, non-implantable limited body contact (‹24hr) medical and dental applications.

Parts produced from Somos® BioClear are clear, have ABS-like mechanical properties and a good combination of strength and toughness. The material is very accurate, meeting the high level of detail required in the medical and dental industry. Somos® BioClear is also very resistant to moisture and many common solvents and chemicals.

Somos® BioClear has passed stringent ISO 10993-5 Cytotoxicity, ISO 10993-10 Irritation & Sensitization and USP Class VI testing, after following the cleaning procedure as described in the Somos® BioClear user guide.

Key Benefits

- Exceptional clarity
- High moisture resistance
- Resistant to common solvents
- Accurate
- Works on large frame stereolithography machines (355nm)

Applications

- Anatomical models for surgical planning
- Surgical guides
- Non-implantable/limited contact medical applications
- Functional prototypes with body contact

More information

For more information, the Somos® BioClear User Guide and buying options, please visit
www.dsm.com/additive-manufacturing/

Brain model printed in Somos® Bioclear

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Technical Data

Liquid Properties			
	UV Postcure	**24h post Autoclave Sterilization**	**Post Gamma Sterilization**
Appearance	Optically clear, near colorless	Optically clear, near colorless	Green Opaque
Viscosity	~260 cps @ 30°C		
Density	~1.12 g/cm³ @ 25°C		

Optical Properties		
EC	11.5 mJ/cm²	[critical exposure]
DP	6.50 mils	[slope of cure-depth vs. ln (E) curve]
E10	54 mJ/cm²	[exposure that gives 0.254 mm (.010 inch) thickness]

Mechanical Properties		UV Postcure		24h post Autoclave Sterilization		Post Gamma Sterilization	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial	Metric	Imperial
D638M	Tensile Strength at Break	50.4 MPa	7.3 ksi				
D638M	Elongation at Break	15.5%		9.1%		8.6%	
D638M	Elongation at Yield	3%					
D638M	Modulus of Elasticity	2,770 MPa	402 ksi	2,039 MPa	296 ksi	2,662 MPa	386 ksi
D790M	Flexural Strength	68.7 MPa	10.0 ksi				
D2240	Flexural Modulus	2,205 MPa	320 ksi				
D256A	Izod Impact (Notched)	25 J/m	0.47 ft-lb/in	50.2 J/m	0.94 ft-lb/in	51.3 J/m	0.96 ft-lb/in
D542	Index of Refraction	1.514					
D570-98	Water Absorption	0.35%		0.87%			

Thermal/Electrical Properties		UV Postcure	
ASTM Method	Property Description	Metric	Imperial
E831-05	C.T.E. -40 - 0°C (-40 - 32°F	67 µm/m°C	37 µin/in°F
E831-05	C.T.E. 0 - 50°C (32 - 122°F)	93 µm/m°C	52 µin/in°F
E831-05	C.T.E. 50 - 100°C (122 - 212°F)	180 µm/m°C	100 µin/in°F
E831-05	C.T.E. 100 - 150°C (212 - 302°F)	187 µm/m°C	104 µin/in°F
D150-98	Dielectric Constant 60 Hz	4.0	
D150-98	Dielectric Constant 1 KHz	3.8	
D150-98	Dielectric Constant 1 MHz	3.5	
D149-97a	Dielectric Strength	15.9 kV/mm	404 V/mil
E1545-00	Tg	43°C	109°F
D648	HDT @ 0.46 MPa (66 psi)	50°C	122°F
D648	HDT @ 1.81 MPa (264 psi)	49°C	120°F

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