The Design to Manufacturing Co.

MATERIAL

BIOCLEAR

OVERVIEW

For more information or advice: theD2Mco.com/contact-us info@theD2Mco.com

Somos® BioClear™

Stereolithography

Improve efficiency with clear, accurate guides and models.

Perform faster, more accurate procedures with customized cutting guides and surgical models made with Somos® BioClear. Not only will this decrease the recovery time for patients, it can also lessen the chances of repeat procedures.

Somos® BioClear fulfills the requirements for non-implantable limited body contact (<24hr) medical and dental applications. 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.

Parts produced from Somos® BioClear are accurate, clear and have ABS-like mechanical properties and a good combination of strength and toughness. The material is resistant to moisture and many common solvents and chemicals.

Key Benefits

- High accuracy and surface quality
- High moisture resistance
- Exceptional clarity facilitates inspection of feature detail and quality
- Resistant to common solvents

Ideal Applications

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

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		
E_C	11.5 mJ/cm²	[critical exposure]
D_P	6.5 mils	[slope of cure-depth vs. ln (E) curve]
E_{10}	54 mJ/cm²	[exposure that gives 0.254 mm (.010 inch) thickness]

Data Sheet

Mechanical Properties		UV Postcure		24h Post Autoclave Sterilization		Post Gamma Sterilization	
ASTM	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 ksi				
D2240	Flexural Modulus	2,205 MPa	320 ksi				
D256A	Izod Impact (Notched)	25 J/cm	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	Property Description	Metric	Imperial
E831-05	C.T.E. 40°C – 0°C (-40°F – 32°F)	67 µm/m°C	37 µin/in°F
E831-05	C.T.E. 0°C – 50°C (32°F – 122°F)	93 µm/m°C	52 µin/in°F
E831-05	C.T.E. 50°C – 100°C (122°F – 212°F)	180 µm/m°C	100 µin/in°F
E831-05	C.T.E. 100°C – 150°C (212°F – 302°F)	187 µm/m°C	104 µin/in°F
D150-98	Dielectric Constant 60 Hz	4	
D150-98	Dialectric Constant 1KHz	3.8	
D150-98	Dielectric Constant 1MHz	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

These values may vary and depend on individual machine processing and post-curing practices.