

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)

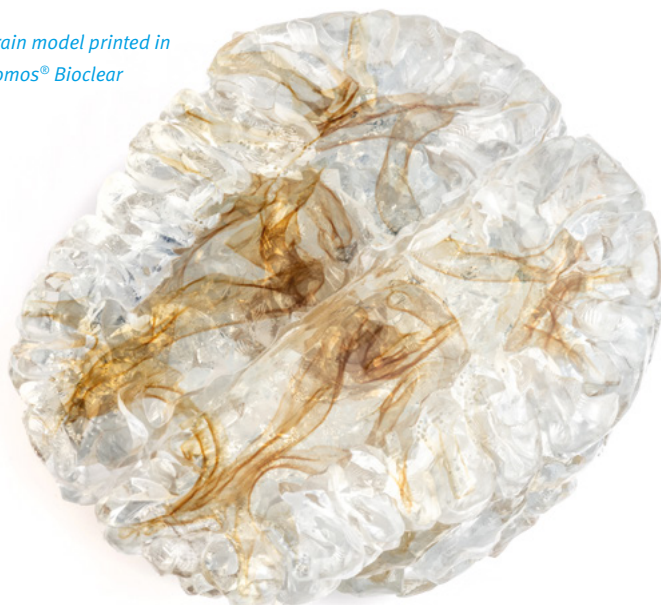
Applications

- 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*



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/cm ³ @ 25°C | | |

| Optical Properties | | |
|--------------------|-------------------------|--|
| EC | 11.5 mJ/cm ² | [critical exposure] |
| DP | 6.50 mils | [slope of cure-depth vs. ln (E) curve] |
| E10 | 54 mJ/cm ² | [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 | T _g | 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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