

# Product Data

# Somos<sup>®</sup> NeXt

## Description

Somos<sup>®</sup> NeXt is an extremely durable stereolithography (SL) resin that produces very accurate parts with high feature detail. Based on the Somos<sup>®</sup> DMX technology, Somos<sup>®</sup> NeXt is a next generation of material that facilitates the production of tough, complex parts with improved moisture resistance and greater thermal properties.

## Applications

Somos<sup>®</sup> NeXt 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, medical, 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 | White                          |
| Viscosity  | ~1,000 cps @ 30°C              |
| Density    | ~1.17 g/cm <sup>3</sup> @ 25°C |

### TECHNICAL DATA - OPTICAL PROPERTIES

|                 |                         |  |
|-----------------|-------------------------|--|
| E <sub>c</sub>  | 12.0 mJ/cm <sup>2</sup> | [critical exposure]                                  |
| D <sub>p</sub>  | 5.80 mils               | [slope of cure-depth vs. ln (E) curve]               |
| E <sub>10</sub> | 67.0 mJ/cm <sup>2</sup> | [exposure that gives 0.254 mm (.010 inch) thickness] |

| TECHNICAL DATA        |                           |                      |                      |
|-----------------------|---------------------------|----------------------|----------------------|
| Mechanical Properties |                           | Somos® NeXt Postcure |                      |
| ASTM Method           | Property Description      | Metric               | Imperial             |
| D638M                 | Tensile Modulus           | 2,370 - 2,490 MPa    | 343 - 361 ksi        |
| D638M                 | Tensile Strength at Yield | 41.1 - 43.3 MPa      | 5.9 - 6.3 ksi        |
| D638M                 | Tensile Strength at Break | 31.0 - 34.6 MPa      | 4.5 - 5.0 ksi        |
| D638M                 | Elongation at Break       | 8 - 10%              | 8 - 10%              |
| D638M                 | Elongation at Yield       | 3%                   | 3%                   |
| D638M                 | Poisson's Ratio           | 0.42 - 0.44          | 0.42 - 0.44          |
| D790M                 | Flexural Strength         | 67.8 - 70.8 MPa      | 9.8 - 10.3 ksi       |
| D2240                 | Flexural Modulus          | 2,415 - 2,525 MPa    | 350 - 366 ksi        |
| D256A                 | Izod Impact (Notched)     | 0.47 - 0.52 J/cm     | 0.88 - 0.97 ft-lb/in |
| D2240                 | Hardness (Shore D)        | 82                   | 82                   |
| D570-98               | Water Absorption          | 0.39 - 0.41%         | 0.39 - 0.41%         |

| TECHNICAL DATA                |                                  |  |  |
|-------------------------------|----------------------------------|--|--|
| Thermal/Electrical Properties |                                  | Somos® NeXt Postcure                               |  |
| ASTM Method                   | Property Description             | Metric   | Imperial   |
| E831-05                       | C.T.E. -40 - 0°C (-40 - 32°F)    | 71.5 - 74.3 $\mu\text{m}/\text{m}^\circ\text{C}$   | 39.7 - 41.3 $\mu\text{in}/\text{in}^\circ\text{F}$ |
| E831-05                       | C.T.E. 0 - 50°C (32 - 122°F)     | 106.5 - 114.5 $\mu\text{m}/\text{m}^\circ\text{C}$ | 59.2 - 63.6 $\mu\text{in}/\text{in}^\circ\text{F}$ |
| E831-05                       | C.T.E. 50 - 100°C (122 - 212°F)  | 168.6 - 175.4 $\mu\text{m}/\text{m}^\circ\text{C}$ | 93.7 - 97.4 $\mu\text{in}/\text{in}^\circ\text{F}$ |
| E831-05                       | C.T.E. 100 - 150°C (212 - 302°F) | 168.8 - 176.4 $\mu\text{m}/\text{m}^\circ\text{C}$ | 93.8 - 98.0 $\mu\text{in}/\text{in}^\circ\text{F}$ |
| D150-98                       | Dielectric Constant 60 Hz        | 4.65   | 4.65   |
| D150-98                       | Dielectric Constant 1 KHz        | 3.97   | 3.97   |
| D150-98                       | Dielectric Constant 1 MHz        | 3.62   | 3.62   |
| D149-97a                      | Dielectric Strength              | 14.9 - 15.5 kV/mm                                  | 379 - 395 V/mil                                    |
| E1545-00                      | Tg                               | 43 - 47°C  | 109 - 116°F  |
| D648                          | HDT @ 0.46 MPa (66 psi)          | 55 - 57°C  | 131 - 134°F  |
| D648                          | HDT @ 1.81 MPa (264 psi)         | 48 - 51°C  | 118 - 124°F  |

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