

Somos® QuickGen™ 500

P3™, Digital Light Processing (DLP) & Liquid-crystal display (LCD)

Somos® QuickGen 500 is a fast-printing, general purpose resin for P3™, Digital Light Processing (DLP) & Liquid-crystal display (LCD) 3D printing”.

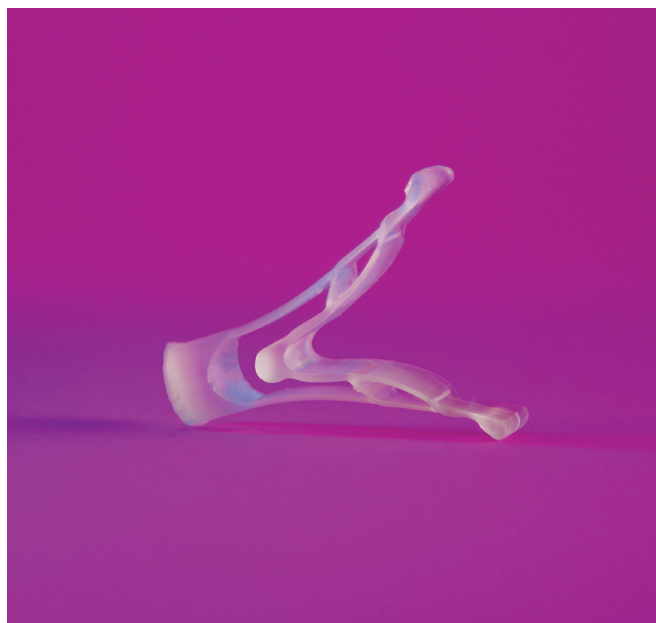
Digital light processing (DLP) 3D printing technology generally boasts faster print speeds and lower capital investment. Combined with **Somos® QuickGen 500**, companies looking to manufacture locally can more quickly and easily adopt 3D printing.

Somos® QuickGen 500 is a fast-printing DLP material with a print speed 2× faster than similar materials. It offers accurate printing for general and functional prototypes.

Somos® QuickGen 500 has unique flexibility; it is more flexible than other resins, but stiffer than elastomers, offering both flexibility and spring back. The material has substantial elongation and a lower modulus with no significant strain rate dependence on elongation at break.

This results in consistent performance independent of how quickly force or strain are applied.

Many flexible materials show greater influence from the rate of applied force. An economical resin, **Somos® QuickGen 500** can quickly produce high volumes due to its high printing speeds and fast post-processing.



Key Benefits

- Fast printing
- Economical
- Balance of flexibility and stiffness
- Accurate
- Near colorless

Ideal Applications

- General and functional prototypes
- Semi-flexible applications
- Applications with detailed features
- Fluid flow analysis

| LIQUID PROPERTIES | | OPTICAL PROPERTIES | | |
|-------------------|----------------|--------------------|-------------------------|------------------------------------------------------|
| Appearance | Opaque | E _c | 4.85 mJ/cm ² | [critical exposure] |
| Viscosity | 1,375–1,450 cp | D _p | 0.160 mm | [slope of cue-depth vs ln (E) curve] |
| Density | 1,093 g/cc | E ₁₀ | 22 mJ/cm ² | [exposure that gives 0.254 mm (.010 inch) thickness] |

385 nm DLP, 5 mW/cm² measured intensity

| LAYER THICKNESS (MM) | TIME TO CURE (S) | ENERGY TO CURE (MJ/CM ²) |
|----------------------|------------------|--------------------------------------|
| 0.05 | 1.5 | 7.5 |
| 0.1 | 2.44 | 12.2 |
| 0.15 | 3.8 | 19 |
| 0.2 | 5.84 | 29.2 |

| MECHANICAL PROPERTIES | | UV POSTCURE | |
|-----------------------|------------------------------|-------------|--------------|
| ASTM Method | Property Description | Metric | Imperial |
| D638M | Tensile Modulus | 465 MPa | 67.4 ksi |
| D638M | Tensile Strength | 20.4 Mpa | 3 ksi |
| D638M | Tensile Elongation at Yield | 5% | |
| D638M | Tensile Elongation at Break | 42% | |
| D638M | Tensile Yield Strength | 12 Mpa | 1.7 ksi |
| D790M | Flexural Modulus | 408 Mpa | 59.2 ksi |
| D790M | Flexural Yield Stress | 15.9 Mpa | 2.3 ksi |
| D790M | Flexural Elongation at Yield | 7.7% | |
| D256 | IZOD Impact, Notched | 70 J/m | 1.3 ft-lb/in |
| D624 | Tear Strength | 95 kN/m | 542 lb/in |
| D570-98 | Water Absorption | 0.57/0.89% | |
| DMTA | E' (25°C, 37°C) | 770/423 Mpa | 112/61 ksi |

| THERMAL/ELECTRICAL PROPERTIES | | UV POSTCURE | |
|-------------------------------|-----------------------------|-------------|----------|
| ASTM Method | Property Description | Metric | Imperial |
| DMTA | Glass Transition, Tan Delta | 62.1°C | 143.8°F |

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

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