

# Stereolithography Materials

**SL**  
DIRECT

for use on

**RenShape® SL 5510** SLA® 350/3500/5000  
system

## Highest Accuracy Stereolithography Material

- Ultimate accuracy
- Excellent sidewall quality
- Humidity resistant
- Low viscosity
- Ideal for master patterns
- Ideal for QuickCast™ applications

### Liquid Material

MEASUREMENT	CONDITION	VALUE
Appearance		Clear Amber
Density	@ 25°C (77°F)	1.13 g/cm <sup>3</sup>
Viscosity	@ 30°C (86°F)	180 cps
Penetration depth (Dp)		4.1 mils (4.3 mils on SLA 5000 system)
Critical exposure (Ec)		11.4 mJ/cm <sup>2</sup> (11.2 mJ/cm <sup>2</sup> SLA 5000 system)
Part building layer thickness*		0.05 mm (0.002 in) 0.10 mm (0.004 in) 0.15 mm (0.006 in)

\*Dependent upon part geometry and build parameters.

### Post-Cured Material

MEASUREMENT	TEST METHOD	VALUE	VALUE
		90-minute UV post-cure	90-minute UV + 2 hours @ 80° thermal post-cure
Hardness, Shore D	ASTM D 2240	86	
Flexural modulus	ASTM D 790	3,054 MPa (443 KSI)	
Flexural strength	ASTM D 790	99 MPa (14,400 PSI)	
Tensile modulus	ASTM D 638	3,296 MPa (478 KSI)	
Tensile strength	ASTM D 638	77 MPa (11,100 PSI)	
Elongation at break	ASTM D 638	5.4%	
Impact strength, notched Izod	ASTM D 256	27 J/m (0.5 ft - lbs/in)	
Heat deflection temperature	ASTM D 648 @ 66 PSI @ 264 PSI	62°C (144°F) 53°C (127°F)	87°C (189°F) 76°C (169°F)
Glass transition, Tg	DMA, E" peak	68°C (154°F)	
Coefficient of thermal expansion	TMA (T<Tg) TMA (T>Tg)	84 x 10 <sup>-6</sup> /°C 182 x 10 <sup>-6</sup> /°C	79 x 10 <sup>-6</sup> /°C 184 x 10 <sup>-6</sup> /°C
Thermal conductivity		0.181 W/m °K 4.33 x 10 <sup>-4</sup> cal/sec cm °C	
Density		1.23 g/cm <sup>3</sup>	

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For SL Technical Support: Tel: 866-288-3554 (Toll Free), Fax: 517-324-1416. Email: [slmaterials@vantico.com](mailto:slmaterials@vantico.com)  
[www.tooling.vantico.com](http://www.tooling.vantico.com)

Vantico A&T US, Inc. 4917 Dawn Ave, E. Lansing, MI 48823 USA Tel: 800-285-4784 Fax: 517-351-6255

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