

## DSM Somos® NanoTool™ Resin for Stereolithography, UV Postcure

Category : Polymer , Rapid Prototyping Polymer

### Material Notes:

Description NanoTool produces strong, stiff, high temperature resistant composite parts on conventional stereolithography machines. This third generation of Somos® ProtoComposite materials is heavily filled with non-crystalline nanoparticles allowing for faster processing. It exhibits superior side wall quality, along with excellent detail resolution as compared to other composite stereolithography materials. Application NanoTool's smooth surface quality and high initial modulus make it an excellent resin for metal plating, a growing application which saves time and money as an alternative to fully metal prototypes. It's also ideal for creating strong, stiff parts that need to resist high temperatures, including wind tunnel models for aerospace and automotive applications. A third major application area is rapid tooling for injection molding. Information Provided by DSM Desotech Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DSM-Somos-NanoTool-Resin-for-Stereolithography-UV-Postcure.php](http://www.lookpolymers.com/polymer_DSM-Somos-NanoTool-Resin-for-Stereolithography-UV-Postcure.php)

Physical Properties	Metric	English	Comments
Density	1.65 g/cc	0.0596 lb/in <sup>3</sup>	
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Water Absorption	0.23 %	0.23 %	ASTM D570-98
Viscosity	2500 cP	2500 cP	
	@Temperature 30.0 °C	@Temperature 86.0 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	94	94	ASTM D2240
Tensile Strength, Yield	61.7 - 78.0 MPa	8950 - 11300 psi	ASTM D638M
Elongation at Break	0.70 - 1.0 %	0.70 - 1.0 %	ASTM D638M
Tensile Modulus	11.0 - 11.4 GPa	1600 - 1650 ksi	ASTM D638M
Flexural Strength	79.0 - 121 MPa	11500 - 17500 psi	ASTM D790M
Flexural Modulus	10.2 - 10.8 GPa	1480 - 1570 ksi	ASTM D790M
Poissons Ratio	0.34 - 0.38	0.34 - 0.38	ASTM D638M
Izod Impact, Notched	0.120 - 0.150 J/cm	0.225 - 0.281 ft-lb/in	ASTM D256A

Thermal Properties	Metric	English	Comments
CTE, linear	25.3 - 26.0 µm/m-°C	14.1 - 14.4 µin/in-°F	
	@Temperature -40.0 - 0.000 °C	@Temperature -40.0 - 32.0 °F	ASTM E831-00

Thermal Properties	Metric $12.4 \mu\text{m}/\text{m}^{\circ}\text{C}$	English $8.0 \mu\text{in}/\text{in}^{\circ}\text{F}$	Comments
	@Temperature 0.000 - 50.0 °C	@Temperature 32.0 - 122 °F	ASTM E831-00
	75.9 - 87.4 $\mu\text{m}/\text{m}^{\circ}\text{C}$	42.2 - 48.6 $\mu\text{in}/\text{in}^{\circ}\text{F}$	ASTM E831-00
	@Temperature 50.0 - 100 °C	@Temperature 122 - 212 °F	
	90.0 - 95.7 $\mu\text{m}/\text{m}^{\circ}\text{C}$	50.0 - 53.2 $\mu\text{in}/\text{in}^{\circ}\text{F}$	ASTM E831-00
	@Temperature 100 - 150 °C	@Temperature 212 - 302 °F	
Deflection Temperature at 0.46 MPa (66 psi)	225 °C	437 °F	ASTM D648-98c
Deflection Temperature at 1.8 MPa (264 psi)	85.0 - 90.0 °C	185 - 194 °F	ASTM D648-98c
Glass Transition Temp, Tg	57.0 - 62.0 °C	135 - 144 °F	ASTM E1545-00

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.6	3.6	ASTM D150-98
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.9	3.9	ASTM D150-98
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	4.0	4.0	ASTM D150-98
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	15.6 - 16.8 kV/mm	396 - 427 kV/in	ASTM D149-97a

Descriptive Properties	Value	Comments
Appearance	Off White	
Dp (mm)	0.11	Slope of cure-depth vs. ln(E) curve
E10 (mJ/cm <sup>2</sup> )	84	Exposure that gives 0.254mm thickness
Ec (mJ/cm <sup>2</sup> )	8.3	Critical exposure

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215, Fengxian District, Shanghai City, China