

Somos[®] Taurus[™]

Stereolithography

A robust material with an unparalleled combination of thermal and mechanical performance.

Somos[®] Taurus brings the combination of thermal and mechanical performance that previously was not possible with stereolithography materials. Its robustness combined with a charcoal gray appearance makes it ideal for the most demanding functional prototyping and end-use applications. Parts printed with this material are easy to clean and finish. The higher heat deflection temperature of Somos[®] Taurus increases the number of applications for the part producer and user.



Key Benefits

- Superior strength and durability
- Wide range of applications
- Excellent surface and large part accuracy
- Heat tolerance up to 90°C
- Thermoplastic-like performance, look and feel

Ideal Applications

- Customized end-use parts
- Tough, functional prototypes
- Under the hood automotive parts
- Functional testing for aerospace
- Low volume connectors for electronics

LIQUID PROPERTIES		OPTICAL PROPERTIES		
Appearance	Charcoal	E _c	10.5 mJ/cm ²	[critical exposure]
Viscosity	~350 cps @ 30°C	D _p	4.2 mils	[slope of cue-depth vs ln (E) curve]
Density	~1.13 g/cm ³ @ 25°C	E ₁₀	111 mJ/cm ²	[exposure that gives 0.254 mm (.010 inch) thickness]

MECHANICAL PROPERTIES		UV POSTCURE		THERMAL POSTCURE	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
D638-14	Tensile Modulus	2,310 MPa	335 ksi	2,206 MPa	320 ksi
D638-14	Tensile Strength at Yield	46.9 MPa	6.8 ksi	49 MPa	7.1 ksi
D638-14	Elongation at Break	24%		17%	
D638-14	Elongation at Yield	4%		5.7%	
D638-14	Poisson's Ratio	0.45		0.44	
D790-15e2	Flexural Strength	73.8 MPa	10.7 ksi	62.7 MPa	9.1 ksi
D790-15e2	Flexural Modulus	2,054 MPa	298 ksi	1,724 MPa	250 ksi
D256A-10e1	Izod Impact (Notched)	47.5 J/m	0.89 ft-lb/in	35.8 J/m	0.67 ft-lb/in
D2240-15	Hardness (Shore D)	83			
D570-98	Water Absorption	0.75%		0.7%	

THERMAL/ELECTRICAL PROPERTIES		UV POSTCURE		THERMAL POSTCURE	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
E831-14	C.T.E. -40 – 0°C (-40 – 32°F)	76.5 $\mu\text{m}/\text{m}^\circ\text{C}$	42.5 $\mu\text{in}/\text{in}^\circ\text{F}$	71.4 $\mu\text{m}/\text{m}^\circ\text{C}$	39.7 $\mu\text{in}/\text{in}^\circ\text{F}$
E831-14	C.T.E. 0 – 50°C (32 – 122°F)	105.3 $\mu\text{m}/\text{m}^\circ\text{C}$	58.5 $\mu\text{in}/\text{in}^\circ\text{F}$	103.4 $\mu\text{m}/\text{m}^\circ\text{C}$	57.4 $\mu\text{in}/\text{in}^\circ\text{F}$
E831-14	C.T.E. 50 – 100°C (122 – 212°F)	151.9 $\mu\text{m}/\text{m}^\circ\text{C}$	84.4 $\mu\text{in}/\text{in}^\circ\text{F}$	157.5 $\mu\text{m}/\text{m}^\circ\text{C}$	87.5 $\mu\text{in}/\text{in}^\circ\text{F}$
E831-14	C.T.E. 100 – 150°C (212 – 302°F)	171.4 $\mu\text{m}/\text{m}^\circ\text{C}$	95.2 $\mu\text{in}/\text{in}^\circ\text{F}$	173.4 $\mu\text{m}/\text{m}^\circ\text{C}$	96.3 $\mu\text{in}/\text{in}^\circ\text{F}$
D150-11	Dielectric Constant 60 Hz	4.6		4.8	
D150-11	Dielectric Constant 1 KHz	4.2		4.4	
D150-11	Dielectric Constant 1 MHz	3.7		3.5	
D149-09	Dielectric Strength	17.7 kV/mm	451 V/mil	17.3 kV/mm	440 V/mil
D648-16	HDT @ 0.46 MPa (66 psi)	62°C	144°F	91°C	196°F
D648-16	HDT @ 1.81 MPa (264 psi)	50°C	122°F	73°C	163°F
D3418-15	Glass Transition Temperature (DSC)	53°C	127°F	54°C	129°F

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

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