

# Somos<sup>®</sup> 14120 White

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Durable, opaque, white, water resistant resin for stereo lithography.

## Physical Properties - Liquid

Appearance	Opaque white
Viscosity	~240 cps at 30°C
Density	~1.10 g/cm <sup>3</sup> at 22°C

## Optical Properties at 355 nm

$E_c$	13.0 mJ/cm <sup>3</sup> <i>[Critical Exposure]</i>
$D_p$	0.159 mm (~0.00625 inch) <i>[slope of cure-depth vs. <math>\ln(E)</math> curve]</i>
$E_{10}$	64 mJ/cm <sup>2</sup> <i>[exposure that gives 0.254mm (0.010 inch) thickness]</i>

# Mechanical Properties (Metric)



<b>ASTM</b>	<b>Description</b>	<b>Somos® White 14120</b>
D638M	Tensile Strength Elongation at Break Elongation at Yield Poisson's Ratio Modulus of Elasticity	45.7 MPa 7.9 % 3.5 % 0.23 2,460 MPa
D790M	Flexural Strength Flexural Modulus	68.9 MPa 2,250 MPa
D256A	Izod-Impact Notched	23.5 J/m
D2240	Hardness (Shore D)	81
D1004	Graves Tear	123,000 N/m
D570-98	Water Absorption	0.24 %

# Thermal & Electrical Properties (Metric)



ASTM	Description	Somos® White 14120
E831-00	C.T.E. -40°C-- 0°C C.T.E. 0°C-- 50°C C.T.E. 50°C-- 100°C C.T.E. 100°C-- 150°C	67 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ 93 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ 156 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ 180 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$
D150-98	Dielectric Constant 60Hz Dielectric Constant 1KHz Dielectric Constant 1MHz	3.9 3.8 3.5
D149-97a	Dielectric Strength	14.6 kV/mm
E1545-00	Tg	44 °C
D648-98c	HDT @ .46 MPa HDT @ 1.81 MPa	53 °C 48 °C

Tg= Glass Transition Temperature      HDT= Deflection Temperature

# Mechanical Properties (Imperial)



<b>ASTM</b>	<b>Description</b>	<b>Somos® White 14120</b>
D638M	Tensile Strength Elongation at Break Elongation at Yield Poisson's Ratio Modulus of Elasticity	6,630 psi 7.9 % 3.5 % 0.23 357,000 psi
D790M	Flexural Strength Flexural Modulus	9,240 psi 310,000 psi
D256A	Izod-Impact Notched	0.44 ft lb/in
D2240	Hardness (Shore D)	81
D1004	Graves Tear	700 lbf/in
D570-98	Water Absorption	0.24 %

# Thermal & Electrical Properties (Imperial)



ASTM	Description	Somos® White 14120
E831-00	C.T.E. -40°F-- 32°F C.T.E. 32°F-- 122°F C.T.E. 122°F-- 212°F C.T.E. 212°F-- 302°F	37 $\mu\text{in/in-}^\circ\text{F}$ 52 $\mu\text{in/in-}^\circ\text{F}$ 87 $\mu\text{in/in-}^\circ\text{F}$ 100 $\mu\text{in/in-}^\circ\text{F}$
D150-98	Dielectric Constant 60Hz Dielectric Constant 1KHz Dielectric Constant 1MHz	3.9 3.8 3.5
D149-97a	Dielectric Strength	370 V/mil
E1545-00	Tg	111°F
D648-98c	HDT @ 66 psi HDT @ 264 psi	127 °F 118 °F

Tg= Glass Transition Temperature      HDT= Deflection Temperature