

# Somos® 7110 Epoxy Photopolymer

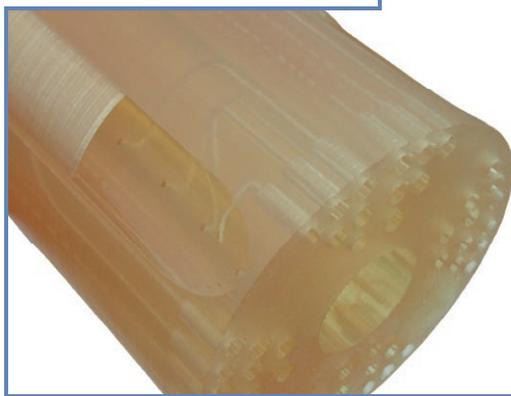
Humidity-Tolerant, High Heat-Deflection-Temperature Accurate Epoxy  
For He-Cd (325 nm) Laser Systems

## Description

DSM Somos® 7110 Photopolymer is a humidity-tolerant, high heat-deflection-temperature, low-curl, high-speed liquid that produces rigid, highly accurate parts. It produces exceptional, undistorted thin walls and down-facing surfaces and exhibits good processing latitude.

## Application

Somos® 7110 Photopolymer is used in the solid imaging process to build three-dimensional parts.



## Physical Properties – Liquid

Appearance	Transparent amber
Viscosity	~700 cps at 30°C
Density	~1.13 g/cm <sup>3</sup> at 25°C

## Optical Properties at 325 nm

$E_c$	8.2 mJ/cm <sup>2</sup> <small>[critical exposure]</small>
$D_p$	0.140 mm (5.5 mils) <small>[slope of cure-depth vs. ln(E) curve]</small>
$E_5$	20 mJ/cm <sup>2</sup> <small>[exposure which produces pane 0.127 mm (5 mils) thick]</small>
$E_{10}$	51 mJ/cm <sup>2</sup> <small>[exposure which produces pane 0.254 mm (10 mils) thick]</small>



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# Physical Properties (Metric)

The numbers reported below are only approximate values. The actual values may vary with build conditions.

ASTM Test	Description	Green Parts	UV Postcure	UV + Thermal Postcure
D638M	Tensile Strength	44 MPa	56 MPa	69 MPa
	Elongation at Break	4.7 - 7.4 %	5.4 - 7.1 %	4.2 - 4.9 %
	Young's Modulus	1,758 MPa	2,117 MPa	2,413 MPa
D790M	Flexural Strength	59 MPa	85 MPa	110 MPa
	Flexural Modulus	1,710 MPa	2,434 MPa	2,668 MPa
D2240	Hardness (Shore D)	81	82	85
D256A	Izod Impact (notched)	26.2 J/m	27.8 J/m	34.2 J/m
D648	Heat Deflection Temperature (HDT)	45 - 54°C	59 - 72°C	77 - 89°C

# Physical Properties (Imperial)

The numbers reported below are only approximate values. The actual values may vary with build conditions.

ASTM Test	Description	Green Parts	UV Postcure	UV + Thermal Postcure
D638M	Tensile Strength	6,400 psi	8,100 psi	10,000 psi
	Elongation at Break	4.7 - 7.4 %	5.4 - 7.1 %	4.2 - 4.9 %
	Young's Modulus	255,000 psi	307,000 psi	350,000 psi
D790M	Flexural Strength	8,600 psi	12,300 psi	15,900 psi
	Flexural Modulus	248,000 psi	353,000 psi	387,000 psi
D2240	Hardness (Shore D)	81	82	85
D256A	Izod Impact (notched)	0.49 ft-lb/in	0.52 ft-lb/in	0.64 ft-lb/in
D648	Heat Deflection Temperature (HDT)	113 - 129°F	138 - 162°F	171 - 192°F