

Product Data:

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 and is intended to be used with a layer thickness of approximately 0.152 mm (0.006 inch). After part formation via UV light exposure, the excess resin is removed by rinsing with a solvent such as propylene carbonate or tripropylene glycol monomethylether (TPM), followed by a rinse in isopropyl alcohol (IPA or isopropanol). The part is post-cured by UV fluorescent light and, optionally, by heat.

Build Parameters

See the DSM Somos® Resin Specific Build Parameters for detailed information.

Physical Properties – Liquid

Appearance Transparent amber

Viscosity ~700 cps at 30°C

Density ~1.13 g/cm³ at 25°C

Optical Properties at 325 nm

Initial values for determining working curve for a He-Cd laser operating at 325 nm.

E_c 8.2 mJ/cm²

[critical exposure]

D_p 0.140 mm (5.5 mils)

[slope of cure-depth vs. ln(E) curve]

E₅ 20 mJ/cm²

[exposure which produces pane 0.127 mm (5 mils) thick]

E₁₀ 51 mJ/cm²

[exposure which produces pane 0.254 mm (10 mils) thick]

Physical Properties

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

Test	Description	Green Parts		UV Postcure		UV + Thermal Postcure	
D638M	Tensile Strength	44 MPa	6,400 psi	56 MPa	8,100 psi	69 MPa	10,000 psi
	Elongation at Break	4.7 – 7.4 %	4.7 – 7.4 %	5.4 – 7.1 %	5.4 – 7.1 %	4.2 – 4.9 %	4.2 – 4.9 %
	Young's Modulus	1,758 MPa	255,000 psi	2,117 MPa	307,000 psi	2,413 MPa	350,000 psi
D790M	Flexural Strength	59 MPa	8,600 psi	85 MPa	12,300 psi	110 MPa	15,900 psi
	Flexural Modulus	1,710 MPa	248,000 psi	2,434 MPa	353,000 psi	2,668 MPa	387,000 psi
D2240	Hardness (Shore D)	81	81	82	82	85	85
D256A	Izod Impact (notched)	26.2 J/m	0.49 ft-lb/in	27.8 J/m	0.52 ft-lb/in	34.2 J/m	0.64 ft-lb/in
D648	Heat Deflection Temperature	45 – 54 °C	113 - 129 °F	59 - 72 °C	138 - 162 °F	77 - 89 °C	171 - 192 °F

The ProtoFunctional™ Materials Company

DSM Somos®



Two Penn's Way, Suite 401, New Castle, DE 19720 USA, Tel: 302-328-5435, Fax: 302-328-5693, <http://www.dsmsomos.com>