

Product Data:
Somos® 7120 Epoxy Photopolymer

**Humidity-Tolerant, High Heat-Deflection-Temperature, Epoxy
 For Solid State (355 nm) Laser Systems**

Description

DSM Somos® 7120 Photopolymer is a humidity-tolerant, high heat deflection temperature, low-curl, high-speed liquid that produces rigid, high accuracy parts. It produces exceptional undistorted thin walls and down-facing surfaces and exhibits good processing latitude.

Application

Somos® 7120 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 355 nm

Initial values for determining working curve for a solid state laser operating at 355 nm.

E_c 8 mJ/cm²

[critical exposure]

D_p 0.123 mm (4.8 mils)

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

E₅ 23 mJ/cm²

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

E₁₀ 64 mJ/cm²

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

Physical Properties

Test	Description	Green Parts		UV Postcure		UV + Thermal Postcure	
D638M	Tensile Strength	44 MPa	6,400 lb/in ²	58 MPa	8,400 lb/in ²	63 MPa	9,100 lb/in ²
	Elongation at Break		1.3 – 7.5 %		2.1 – 6.9 %		2.3 – 4.1 %
	Young's Modulus	2,222 MPa	322,000 lb/in ²	2,477 MPa	359,000 lb/in ²	2,588 MPa	375,000 lb/in ²
D790M	Flexural Strength	89 MPa	12,900 lb/in ²	108 MPa	15,700 lb/in ²	113 MPa	16,400 lb/in ²
	Flexural Modulus	2,570 MPa	372,000 lb/in ²	2,967 MPa	430,000 lb/in ²	2,877 MPa	417,000 lb/in ²
D2240	Hardness (Shore D)		88 durometer		88 durometer		88 durometer
D256A	Notched Izod Impact Strength	25 J/m	0.46 ft-lb/in	27 J/m	0.50 ft-lb/in	32 J/m	0.6 ft-lb/in
D648	Heat Deflection Temperature		Up to 65°C		Up to 70°C		Up to 97°C

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

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>