Somos® 8100 Epoxy Photopolymer

Flexible, Accurate, High-Speed, High-Impact-Strength Epoxy Resin for Stereolithography For Single-line (351 nm) Ar^+ Laser Systems

Description

DSM Somos® 8100 is a high-speed liquid photopolymer that produces flexible, high-impact-strength, accurate parts using stereolithography machines. It has a wide processing latitude and excellent tolerance to a wide temperature and humidity range during and after build. This material is especially useful in functional applications where flexibility and impact-strength are critical requirements (e.g., plastic bottles, packaging, automobile panels, electronic enclosures, medical products, and snap-fit parts).

Application

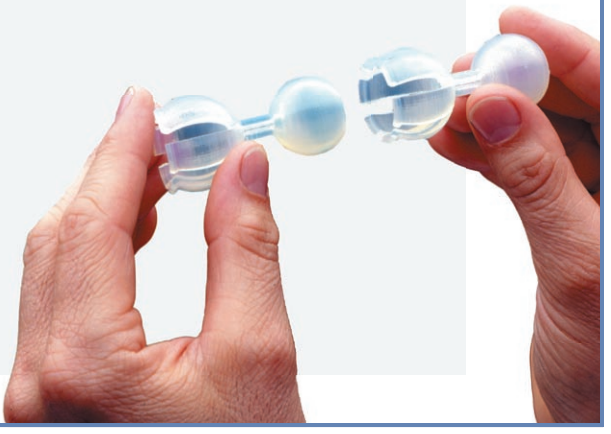
Somos® 8100 Photopolymer is used in the solid imaging process to build three-dimensional parts.

Physical Properties – Liquid

Appearance	Transparent amber
Viscosity	~600 cps at 30°C
Density	~1.11 g/cm³ at 25°C

Optical Properties at 351 nm

E_c	7.2 mJ/cm² *[critical exposure]*
D_p	0.157 mm (0.0062 inch) *[slope of cure-depth vs. ln(E) curve]*
E_5	16 mJ/cm² *[exposure that gives 0.127 mm (.005 inch) thickness]*
E_{10}	36 mJ/cm² *[exposure that gives 0.254 mm (.010 inch) thickness]*



DSM Somos®
2 Penn's Way, Suite 401
New Castle, DE 19720, USA
Tel: +1 302.326.8100
Fax: +1 302.326.8121

DSM Desotech bv
3150 AB Hoek van Holland
The Netherlands
Tel: +31 1743.15391
Fax: +31 1743.15530

www.dsmsomos.com

Email:
Americas@dsmsomos.info
Europe@dsmsomos.info
Asia@dsmsomos.info

Physical Properties (Metric)

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

ASTM Test	Description	Somos® 8100 UV	Polyethylene*
D638M	Tensile Strength	26 MPa	13 -28 MPa
	Elongation at Break	17 - 24 %	100 - 965 %
	Young's Modulus	276 - 738 MPa	262 - 517 MPa
D790M	Flexural Strength	26 MPa	N/A**
	Flexural Modulus	627 MPa	276 - 724 MPa
D2240	Hardness (Shore D)	81	44 - 50
D256A	Izod Impact - Notched	59 J/m	53 J/m - No break
D648	Deflection Temperature	54°C	55 - 56°C
D1004	Graves Tear	196 Newton	N/A**

**Low and medium density polyethylene linear copolymer (Reference: Modern Plastics Encyclopedia, 1998).*

***N/A: Not Available*

Physical Properties (Imperial)

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

ASTM Test	Description	Somos® 8100 UV	Polyethylene*
D638M	Tensile Strength	3,800 psi	1,900 - 4,100 psi
	Elongation at Break	17 - 24 %	100 - 965 %
	Young's Modulus	40,000 - 107,000 psi	38,000 - 76,000 psi
D790M	Flexural Strength	3,800 psi	N/A**
	Flexural Modulus	9,100 psi	4,000 - 10,500 psi
D2240	Hardness (Shore D)	81	44 - 50
D256A	Izod Impact - Notched	1.1 ft-lb/in	0.99 ft-lb/in - No break
D648	Deflection Temperature	129°F	131 - 132°F
D1004	Graves Tear	44 lbf	N/A**

**Low and medium density polyethylene linear copolymer (Reference: Modern Plastics Encyclopedia, 1998).*

***N/A: Not Available*