

# Product Data

# Somos<sup>®</sup> 9120

## Description

DSM's Somos<sup>®</sup> 9120 is a liquid photopolymer that produces robust, functional and accurate parts using stereolithography machines. The material offers superior chemical resistance and a wide processing latitude. With mechanical properties that mimic many engineering plastics, parts created from Somos<sup>®</sup> 9120 exhibit superior fatigue properties, strong memory retention and high quality up-facing and down-facing surfaces. Somos<sup>®</sup> 9120 also offers a good balance of properties between rigidity and functionality.

## Applications

This photopolymer is used in solid imaging processes, like stereolithography, to build three-dimensional parts. This material is also useful in creating parts for applications where durability and robustness are critical requirements (e.g., automobile components, electronic housings, medical products, large panels and snap-fit parts).

TECHNICAL DATA - LIQUID PROPERTIES	
Appearance	Off White
Viscosity	~450 cps @ 30°C
Density	~1.13 g/cm <sup>3</sup> @ 25°C

TECHNICAL DATA - OPTICAL PROPERTIES		
E <sub>c</sub>	10.9 mJ/cm <sup>2</sup>	[critical exposure]
D <sub>p</sub>	5.6 mils	[slope of cure-depth vs. ln (E) curve]
E <sub>10</sub>	65 mJ/cm <sup>2</sup>	[exposure that gives 0.254 mm (.010 inch) thickness]

TECHNICAL DATA					
Mechanical Properties		Somos <sup>®</sup> 9120 UV Postcure		Polypropylene*	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
D638M	Tensile Strength	30 - 32 MPa	4.4 - 4.7 ksi	31 - 37.2 MPa	4.5 - 5.4 ksi
D638M	Elongation at Yield	15 - 25%	15 - 21%	7 - 13%	7 - 13%
D638M	Young's Modulus	1,227 - 1,462 MPa	178 - 212 ksi	1,138 - 1,551 MPa	165 - 225 ksi
D790M	Flexural Strength	44 - 46 MPa	6.0 - 6.7 ksi	41 - 55 MPa	6.0 - 8.0 ksi
D790M	Flexural Modulus	1,310 - 1,455 MPa	190 - 210 ksi	1,172 - 1,724 MPa	170 - 250 ksi
D2240	Hardness (Shore D)	80 - 82	80 - 82	N/A	N/A
D256A	Izod Impact (Notched)	48 - 53 J/m	0.9 - 1.0 ft-lb/in	21 - 75 J/m	0.4 - 1.4 ft-lb/in
D648-07	Deflection Temperature	52 - 61°C	126 - 142°F	107 - 121°C	225 - 250°F

\*Unfilled polypropylene (Reference: Modern Plastics Encyclopedia, 1997)

**DSM Functional Materials**  
**Somos® Materials Group**

**in North America**

1122 St. Charles Street  
Elgin, Illinois 60120  
USA  
Phone: +1.847.697.0400

**in Europe**

Slachthuisweg 30  
3150 XN Hoek van Holland  
The Netherlands  
Phone: +31.174.315.391

**in China**

476 Li Bing Road  
Zhangjiang Hi-Tech Park  
Pudong New Area  
Shanghai 201203, China  
Phone: +86.21.6141.8064

Visit us online at [www.dsm.com/somos](http://www.dsm.com/somos)

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## About RPS

RPS has been in operation over ten years and our engineers collectively have decades of experience working with stereolithography and laser sintering equipment. With proven experience in 3D printing, engineering, electronics, computer-aided engineering and more, we understand the technology and can offer advice on how it can suit your specific application.

We manufacture the **NEO800** stereolithography system, designed, developed and built by RPS engineers. We are also an HP Channel Partner of HP's Multi-Jet Fusion technology and offer a range of materials and software through our partnership with market-leading suppliers ALM, DSM Somos® and Materialise.

    +44 (0) 1296 425665 | [support@rps.ltd](mailto:support@rps.ltd) | [www.rps.ltd](http://www.rps.ltd)

14 Bridgegate Business Park | Gatehouse Way | Aylesbury | Buckinghamshire | HP19 8XN | UK