Product Data

Somos® 9120

Description

DSM's Somos® 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® 9120 exhibit superior fatigue properties, strong memory retention and high quality up-facing and down-facing surfaces. Somos® 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^3 @ 25°C

TECHNICAL DATA - OPTICAL PROPERTIES		
E_C	10.9 mJ/cm^2	[critical exposure]
D_P	5.6 mils	[slope of cure-depth vs. ln (E) curve]
E_{10}	65 mJ/cm^2	[exposure that gives 0.254 mm (.010 inch) thickness]

TECHNICAL DATA					
Mechanical Properties		**Somos® 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)

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