Somos® 9420

Unspecified

DSM Somos®

Message:

DSM's Somos ® 9420 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 ® 9420 exhibit superior fatigue resistance, strong memory retention and high quality up-facing and down-facing surfaces. Somos ® 9420 also offers a good balance of properties between rigidity and functionality.

Application

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).

General Information			
Features	Durable Fatigue Resistant Good Chemical Resistance Good Dimensional Stability Good Surface Finish Medium Rigidity		
Uses	Automotive Applications Electrical/Electronic Applications Housings Medical/Healthcare Applications Prototyping		
Appearance	Off-White		
Forms	Liquid		
Processing Method	3D Printing, Stereolithography		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.13	g/cm³	
Water Absorption (Equilibrium)	0.93	%	ASTM D570
Viscosity (30°C)	475	mPa·s	
Critical Exposure	15.0	mJ/cm²	
Penetration Depth	137.2	µm	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore D)	70 to 74		ASTM D2240
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	553 to 850	MPa	ASTM D638
Tensile Strength	17.0 to 20.0	MPa	ASTM D638
Tensile Elongation (Yield)	25 to 30	%	ASTM D638

Flexural Modulus	768 to 900	MPa	ASTM D790
Flexural Strength	24.0 to 30.0	MPa	ASTM D790
Poisson's Ratio	0.43		ASTM D638
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	44 to 48	J/m	ASTM D256A
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	47.0 to 50.0	°C	
1.8 MPa, Unannealed	36.0 to 38.0	°C	
Glass Transition Temperature	57.0 to 60.0	°C	ASTM E1545
CLTE - Flow			ASTM E831
-40 to 0°C	9.7E-5	cm/cm/°C	
0 to 50°C	1.5E-4	cm/cm/°C	
50 to 100°C	1.8E-4	cm/cm/°C	
100 to 150°C	1.4E-4	cm/cm/°C	
Electrical	**Nominal Value**	**Unit**	**Test Method**
Dielectric Strength	14	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	5.33		
1 kHz	4.66		
1 MHz	3.94		

Recommended distributors for this material

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