

ProtoGen 18420

Unspecified

DSM Somos®

Message:

DSM's Somos® ProtoGen 18420 is a liquid, ABS-like, photopolymer that produces accurate parts ideal for general purpose applications. Somos® ProtoGen resins are the first stereolithography resins to demonstrate different material properties based on machine exposure control. Based on Somos® Oxetane™ chemistry, Somos® ProtoGen 18420 offers superior chemical resistance, a wide processing latitude and excellent tolerance to a broad range of temperatures and humidity, both during and after the build.

Applications

This high-temperature resistant, ABS-like photopolymer is used in solid imaging processes, like stereolithography, to build three-dimensional parts. Somos® ProtoGen 18420 provides considerable processing latitude and is ideal for the medical, electronic, aerospace and automotive markets that demand accurate RTV patterns, durable concept models, highly accurate and humidity & temperature resistant parts.

General Information			
Features	Durable		
	Good Chemical Resistance		
	High Heat Resistance		
	Humidity Resistant		
Uses	Aerospace Applications		
	Automotive Applications		
	Electrical/Electronic Applications		
	General Purpose		
	Medical/Healthcare Applications		
	Modeling Material		
	Mold Making		
	Patterns		
Appearance	White		
Forms	Liquid		
Processing Method	3D Printing, Stereolithography		
Physical	Nominal Value	Unit	Test Method
Density	1.16	g/cm³	ASTM D570
Water Absorption			
Equilibrium ¹	0.61	%	
Equilibrium ²	0.68	%	ASTM D638
Viscosity (30°C)	350	mPa · s	
Poisson's Ratio			
-- ³	0.43 to 0.45		
-- ⁴	0.40 to 0.42		
Critical Exposure	6.73	mJ/cm²	
Penetration Depth	110.2	µm	

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shore D ⁵	86 to 87		
Shore D ⁶	86 to 88		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			ASTM D638
-- ⁷	2540 to 2620	MPa	
-- ⁸	2880 to 2960	MPa	
-- ⁹	2180 to 2310	MPa	
Tensile Strength			ASTM D638
-- ¹⁰	66.1 to 68.1	MPa	
-- ¹¹	56.9 to 57.1	MPa	
-- ¹²	42.2 to 43.8	MPa	
Tensile Elongation			ASTM D638
Break ¹³	8.0 to 16	%	
Break ¹⁴	6.0 to 9.0	%	
Break ¹⁵	8.0 to 12	%	
Flexural Modulus			ASTM D790
-- ¹⁶	1990 to 2130	MPa	
-- ¹⁷	2280 to 2340	MPa	
-- ¹⁸	2400 to 2450	MPa	
Flexural Strength			ASTM D790
-- ¹⁹	66.7 to 70.5	MPa	
-- ²⁰	84.9 to 87.7	MPa	
-- ²¹	83.8 to 86.7	MPa	
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			ASTM D256A
-- ²²	15 to 18	J/m	
-- ²³	20 to 22	J/m	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed ²⁴	93.0 to 98.0	°C	
0.45 MPa, Unannealed ²⁵	53.0 to 56.0	°C	
1.8 MPa, Unannealed ²⁶	46.0 to 47.0	°C	
1.8 MPa, Unannealed ²⁷	74.0 to 78.0	°C	
Glass Transition Temperature			ASTM E1545
-- ²⁸	57.0 to 59.0	°C	
-- ²⁹	78.0 to 96.0	°C	
CLTE - Flow			ASTM E831
-40 to 0°C ³⁰	6.7E-5 to 6.8E-5	cm/cm/°C	
-40 to 0°C ³¹	7.5E-5 to 7.6E-5	cm/cm/°C	
0 to 50°C ³²	8.2E-5 to 8.6E-5	cm/cm/°C	

0 to 50°C ³³	1.0E-4 to 1.1E-4	cm/cm/°C	
50 to 100°C ³⁴	1.1E-4 to 1.2E-4	cm/cm/°C	
50 to 100°C ³⁵	1.1E-4 to 1.4E-4	cm/cm/°C	
100 to 150°C ³⁶	1.3E-4 to 1.4E-4	cm/cm/°C	
100 to 150°C ³⁷	1.5E-4 to 1.6E-4	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength			ASTM D149
-- ³⁸	14	kV/mm	
-- ³⁹	13 to 14	kV/mm	
Dielectric Constant			ASTM D150
60 Hz ⁴⁰	3.10 to 3.30		
60 Hz ⁴¹	3.50 to 3.60		
1 kHz ⁴²	3.40 to 3.50		
1 kHz ⁴³	3.10 to 3.20		
1 MHz ⁴⁴	2.90 to 3.00		
1 MHz ⁴⁵	3.10 to 3.30		
NOTE			
1.	UV Postcure & Thermal Postcure		
2.	UV Postcure at HOC -2		
3.	UV Postcure at HOC -2		
4.	UV Postcure & Thermal Postcure		
5.	UV Postcure & Thermal Postcure		
6.	UV Postcure at HOC -2		
7.	UV Postcure at HOC +3		
8.	UV Postcure & Thermal Postcure		
9.	UV Postcure at HOC -2		
10.	UV Postcure & Thermal Postcure		
11.	UV Postcure at HOC +3		
12.	UV Postcure at HOC -2		
13.	UV Postcure at HOC -2		
14.	UV Postcure & Thermal Postcure		
15.	UV Postcure at HOC +3		
16.	UV Postcure at HOC -2		
17.	UV Postcure & Thermal Postcure		
18.	UV Postcure at HOC +3		
19.	UV Postcure at HOC -2		
20.	UV Postcure & Thermal Postcure		
21.	UV Postcure at HOC +3		
22.	UV Postcure & Thermal Postcure		
23.	UV Postcure at HOC -2		
24.	UV Postcure & Thermal Postcure		
25.	UV Postcure at HOC -2		

26.	UV Postcure at HOC -2
27.	UV Postcure & Thermal Postcure
28.	UV Postcure at HOC -2
29.	UV Postcure & Thermal Postcure
30.	UV Postcure & Thermal Postcure
31.	UV Postcure at HOC -2
32.	UV Postcure & Thermal Postcure
33.	UV Postcure at HOC -2
34.	UV Postcure & Thermal Postcure
35.	UV Postcure at HOC -2
36.	UV Postcure at HOC -2
37.	UV Postcure & Thermal Postcure
38.	UV Postcure & Thermal Postcure
39.	UV Postcure at HOC -2
40.	UV Postcure & Thermal Postcure
41.	UV Postcure at HOC -2
42.	UV Postcure at HOC -2
43.	UV Postcure & Thermal Postcure
44.	UV Postcure & Thermal Postcure
45.	UV Postcure at HOC -2

The information and data on this page are provided by manufacturers and document providers. SHANGHAI SUSHENG assumes no legal liability. It is strongly recommended to verify all technical data with material suppliers before final material selection. All rights belong to the original authors. If any infringement occurs, please contact us immediately.

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

