

Product Description

DSM Somos® ProtoGen 18920 is a liquid photopolymer that produces accurate, ABS-like parts ideal for general purpose applications. ProtoGen resins are the first SL resins to demonstrate different material properties based on machine exposure control. Based on Somos Oxetane™ chemistry, ProtoGen 18920 offers superior chemical resistance, a wide processing latitude and excellent tolerance to a broad range of temperatures and humidities, both during and after build.

Applications

This high-temperature resistant, ABS-like photopolymer is used in solid imaging processes, like stereolithography, to build three-dimensional parts. Somos ProtoGen 18920 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.

Technical Data: Liquid Properties

Appearance	Gray
Viscosity	~350 cps @ 30 °C
Density	1.16 g/cm ³ @ 25 °C

Technical Data: Optical Properties

E _c	~7.0 mJ/cm ²	[critical exposure]
D _p	0.11 mm (~0.0042 inch)	[slope of cure-depth vs. ln(E) curve]
E ₁₀	TBD	[exposure that gives 0.254 mm (.010 inch) thickness]



ProtoGen 18920 is a liquid, photopolymer that produces accurate parts ideal for general purpose applications.

Key Product Benefits:

- Humidity & Temperature Tolerant
- Excellent Dimensional Stability
- Fast Processing Speeds

(continued)

For technical service, please visit: <http://www.dsmsomos.com>

Date: 11/08

ProtoGen™ 18920

Technical Data: Mechanical Properties

ASTM Method	Property Description	ProtoGen™ 18920 UV Postcure		ProtoGen™ 18920 UV Postcure at HOC +3*		ProtoGen™ 18920 UV & Thermal Postcure	
		Metric	Imperial	Metric	Imperial	Metric	Imperial
D638M	Tensile Strength	46.6 – 47.8 MPa	6.8 – 6.9 ksi	56.1 – 56.9 MPa	8.1 – 8.3 ksi	69.2 – 69.6 MPa	10.0 – 10.1 ksi
D638M	Tensile Modulus	2,103 – 2,317 MPa	305.0 – 336.0 ksi	2,577 – 2,623 MPa	373.7 – 380.4 ksi	2,544 – 2,916 MPa	369.0 – 423.0 ksi
D638M	Elongation at Break	13 - 19%	13 - 19%	4.9 – 12.3%	4.9 – 12.3%	4.2 – 9.0 %	4.2 – 9.0 %
D638M	Poisson's Ratio	N/A	N/A	N/A	N/A	N/A	N/A
D790M	Flexural Strength	73.0 – 75.0 MPa	10.6 – 10.9 ksi	85.0 – 87.0 MPa	12.3 – 12.6 ksi	92.1 – 98.1 MPa	13.4 – 14.2 ksi
D790M	Flexural Modulus	2,126 – 2,314 MPa	308.3 – 336.6 ksi	2,442 – 2,518 MPa	354.2 – 380.4 ksi	2,504 – 2,696 MPa	363.1 – 391.0 ksi
D2240	Hardness (Shore D)	85.6 – 86.4	85.6 – 86.4	86.1 – 87.1	86.1 – 87.1	86.2 – 88.0	86.2 – 88.0
D256A	Izod Impact-Notched	0.14 – 0.28 J/cm	0.26 - 0.52 ft-lb/in	0.22 - 0.26 J/cm	0.41 – 0.49 ft-lb/in	0.20 – 0.24 J/cm	0.37 – 0.45 ft-lb/in
D570-98	Water Absorption	0.78%	0.78%	0.74%	0.74%	0.38 %	0.38 %

Technical Data: Thermal/Electrical Properties

ASTM Method	Property Description	ProtoGen™ 18920 UV Postcure		ProtoGen™ 18920 UV & Thermal Postcure	
		Metric	Imperial	Metric	Imperial
E831-05	C.T.E. -40 C - 0 C (-40 F – 32 F)	69.4 µm/m- C	38.6 µin/in- F	64.7 µm/m- C	35.9 µin/in- F
E831-05	C.T.E. 0 C - 50 C (32 F – 122 F)	74.0 µm/m- C	41.1 µin/in- F	74.2 µm/m- C	41.2 µin/in- F
E831-05	C.T.E. 50 C - 100 C (122 F – 212 F)	106.0 µm/m- C	58.9 µin/in- F	79.2 µm/m- C	44.0 µin/in- F
E831-05	C.T.E. 100 C - 150 C (212 F – 302 F)	130.3 µm/m- C	72.4 µin/in- F	138.8 µm/m- C	77.1 µin/in- F
D150-98	Dielectric Constant 60 Hz	3.53	3.53	3.28	3.28
D150-98	Dielectric Constant 1KHz	3.44	3.44	3.23	3.23
D150-98	Dielectric Constant 1MHz	3.21	3.21	3.04	3.04
D149-97a	Dielectric Strength	15.4 – 15.9 kV/mm	391 - 403 V/mil	14.3 – 15.2 kV/mm	364 – 386 V/mil
E1545-00	Tg	69.0°C	156 F	97.5°C	208° F
D648	HDT @ 0.46 MPa (66 psi)	58.7 C	137 F	96.5° C	205° F
D648	HDT @ 1.81 MPa (264 psi)	51.0 C	123° F	78.6° C	175° F

*The data in this column was collected from internal testing

www.dsmsomos.com



DSM Somos®
1122 St. Charles Street
Elgin, Illinois 60120 USA
Tel: +1-847-697-0400
Fax: +1-847-468-7785

DSM Desotech bv
3150 AB Hoek van Holland
The Netherlands
Tel: +31-1743-15391
Fax: +31-1743-15530

DSM Desotech-China
11F, The Headquarters Building
No. 168 Middle Xi Zang Road
Shanghai 200001, China
Tel: +(86) 21-6141 8064
Fax: +(86) 21-6141 7008

NOTICE : DSM Somos is an unincorporated subsidiary of DSM Desotech Inc. The information presented herein is based on generally accepted analytical and testing practices and is believed to be accurate. However, DSM Desotech expressly disclaims any product warranties which may be implied including warranty of merchantability and/or fitness for a particular purpose. DSM Desotech's products are sold subject to DSM Desotech's standard terms and conditions of sale, copies of which are available upon request. Purchasers are responsible for determining the suitability of the product for its intended use and the appropriate manner of utilizing the product in purchaser's production processes and applications so as to insure safety, quality and effectiveness. Purchasers are further responsible for obtaining necessary patent rights to practice any invention in connection with the use of purchased product and any other product or process. DSM Desotech reserves the right to change specifications of their products without notice.