



Somos[®] ProtoGen 18420

Stereolithography



When you need a high-heat and humidity resistant material for your parts, **Somos® ProtoGen 18420** delivers the performance you need with accurate, easy-to-clean white parts.

Somos® ProtoGen 18420 helps our customers produce various part properties based upon the machine exposure that fit a variety of applications.

Key Benefits

- Excellent durability
- Superior strength
- Outstanding accuracy

Ideal Applications

- Electronic covers
- Consumer products
- Snap fit assembly

Technical Data

Liquid Properties		Optical Properties		
Appearance	White	E_c	6.73 mJ/cm ²	[critical exposure]
Viscosity	~350 cps @ 30°C	D_p	4.34 mils	[slope of cure-depth vs. ln (E) curve]
Density	~1.16 g/cm ³ @ 25°C	E_{10}	67.6 mJ/cm ²	[exposure that gives 0.254 mm (0.10 inch) thickness]

Mechanical Properties		UV Postcure at HOC -2		UV Postcure at HOC +3		UV & Thermal Postcure	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial	Metric	Imperial
D638M	Tensile Strength	42.2–43.8 MPa	6.1–6.4 ksi	56.9–57.1 MPa	8.2–8.3 ksi	66.1–68.1 MPa	9.6–9.9 ksi
D638M	Tensile Modulus	2,180–2,310 MPa	316–336 ksi	2,540–2,620 MPa	370–380 ksi	2,880–2,960 MPa	417–430 ksi
D638M	Elongation at Break	8–16%		8–12%		6–9%	
D638M	Poisson's Ratio	0.43–0.45		N/A		0.4–0.42	
D790M	Flexural Strength	66.7–70.5 MPa	9.7–10.2 ksi	83.8–86.7 MPa	12.2–12.6 ksi	84.9–87.7 MPa	12.3–12.7 ksi
D790M	Flexural Modulus	1,990–2,130 MPa	289–309 ksi	2,400–2,450 MPa	350–355 ksi	2,280–2,340 MPa	331–339 ksi
D2240	Hardness (Shore D)	86–88		N/A		86–87	
D256A	Izod Impact (Notched)	0.2–0.22 J/m	0.37–0.41 ft-lb/in	N/A		0.15–0.18 J/m	0.28–0.34 ft-lb/in
D570-98	Water Absorption	0.68%		N/A		0.61%	

Thermal/Electrical Properties		UV Postcure at HOC -2		UV & Thermal Postcure	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
E831-05	C.T.E. -40–0°C (-40–32°F)	74.6–75.5 µm/m°C	35.3–37.1 µin/in°F	67.3–68.2 µm/m°C	37.4–37.9 µin/in°F
E831-05	C.T.E. 0–50°C (32–122°F)	101.2–110.3 µm/m°C	48.8–51.7 µin/in°F	82.2–86.4 µm/m°C	45.7–48.0 µin/in°F
E831-05	C.T.E. 50–100°C (122–212°F)	114.4–135.8 µm/m°C	91.3–95.5 µin/in°F	110.4–116.0 µm/m°C	61.3–64.4 µin/in°F
E831-05	C.T.E. 100–150°C (212–302°F)	129.5–138.1 µm/m°C	83.3–92.9 µin/in°F	152.7–163.2 µm/m°C	84.8–90.7 µin/in°F
D150-98	Dielectric Constant 60 Hz	3.5–3.6		3.1–3.3	
D150-98	Dielectric Constant 1 KHz	3.4–3.5		3.1–3.2	
D150-98	Dielectric Constant 1 MHz	3.1–3.3		2.9–3.0	
D149-97A	Dielectric Strength	13.2–14.2 kV/mm	334–359 V/mil	13.8–14.1 kV/mm	350–357 V/mil
E1545-00	Tg	57–59°C	135–138°F	78–96°C	172–205°F
D648	HDT @ 0.46 MPa (66 psi)	53–56°C	127–133°F	93–98°C	199–208°F
D648	HDT @ 1.81 MPa (264 psi)	46–47°C	114–116°F	74–78°C	166–173°F

These values may vary and depend on individual machine processing and post-curing practices.

[More information at am.covestro.com](https://www.amcovestro.com)



Covestro Deutschland AG
Kaiser-Wilhelm-Allee 60
51373 Leverkusen
Germany

www.covestro.com

The manner in which you use our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, is beyond our control. Therefore, it is imperative that you test our products to determine suitability for your processing and intended uses. Your analysis must at least include testing to determine suitability from a technical, health, safety, and environmental and regulatory standpoint. Such testing has not necessarily been done by Covestro, and Covestro has not obtained any approvals or licenses for a particular use or application of the product, unless explicitly stated otherwise. If the intended use of the product is for the manufacture of a pharmaceutical/medicinal product, medical device¹ or of pre-cursor products for medical devices or for other specifically regulated applications which lead or may lead to a regulatory obligation of Covestro, Covestro must explicitly agree to such application before the sale. Any samples provided by Covestro are for testing purposes only and not for commercial use. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information, including technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed by you that you assume and hereby expressly release and indemnify us and hold us harmless from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent. These values are typical values only. Unless explicitly agreed in written form, they do not constitute a binding material specification or warranted values.

¹Please see the "Guidance on Use of Covestro Products in a Medical Application" document.

Edition: March 2022 · Printed in Germany