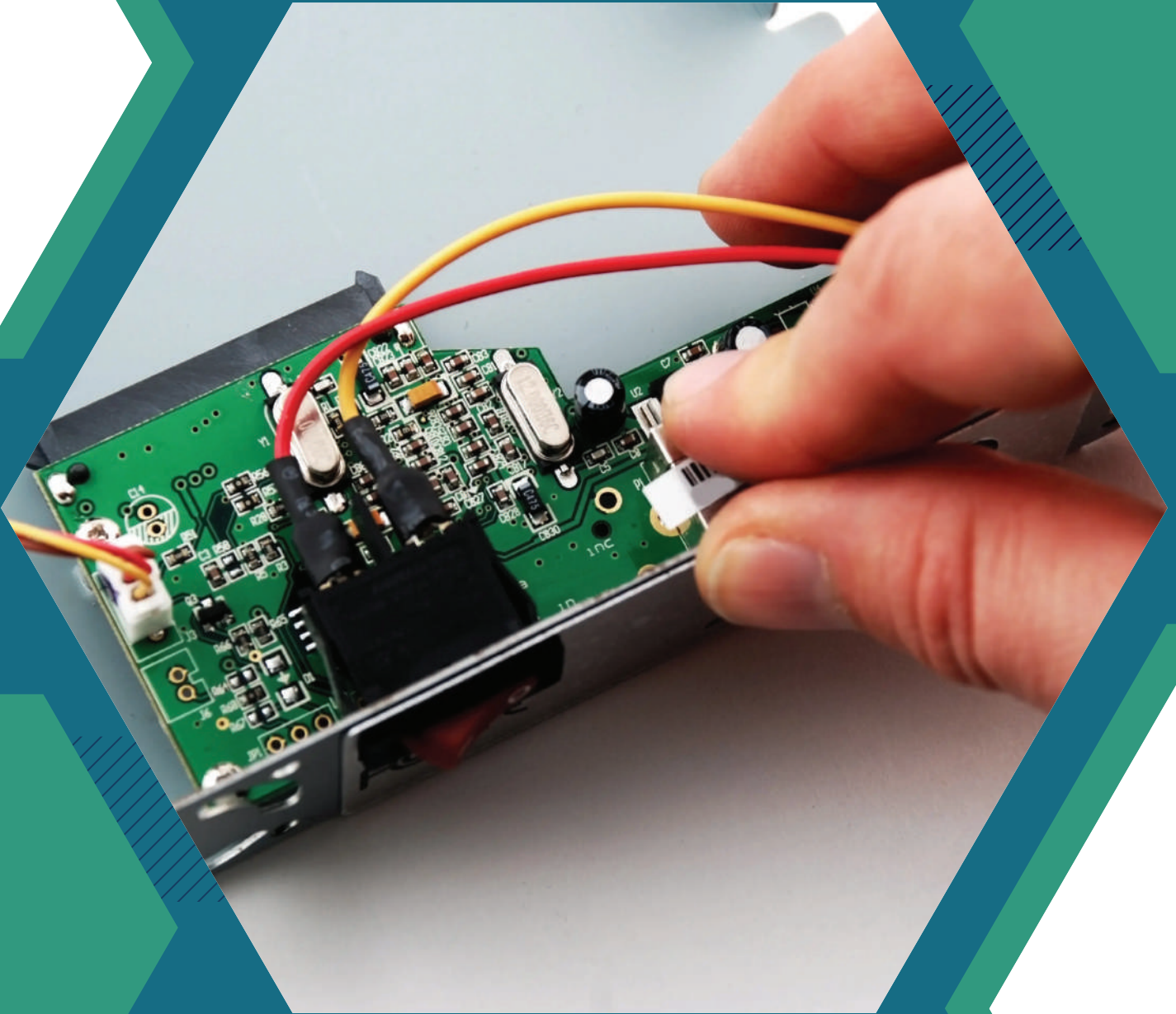


The
Design to
Manufacturing Co.



MATERIAL PROTOGEN

OVERVIEW

For more information or advice:  theD2Mco.com/contact-us

 info@theD2Mco.com

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.

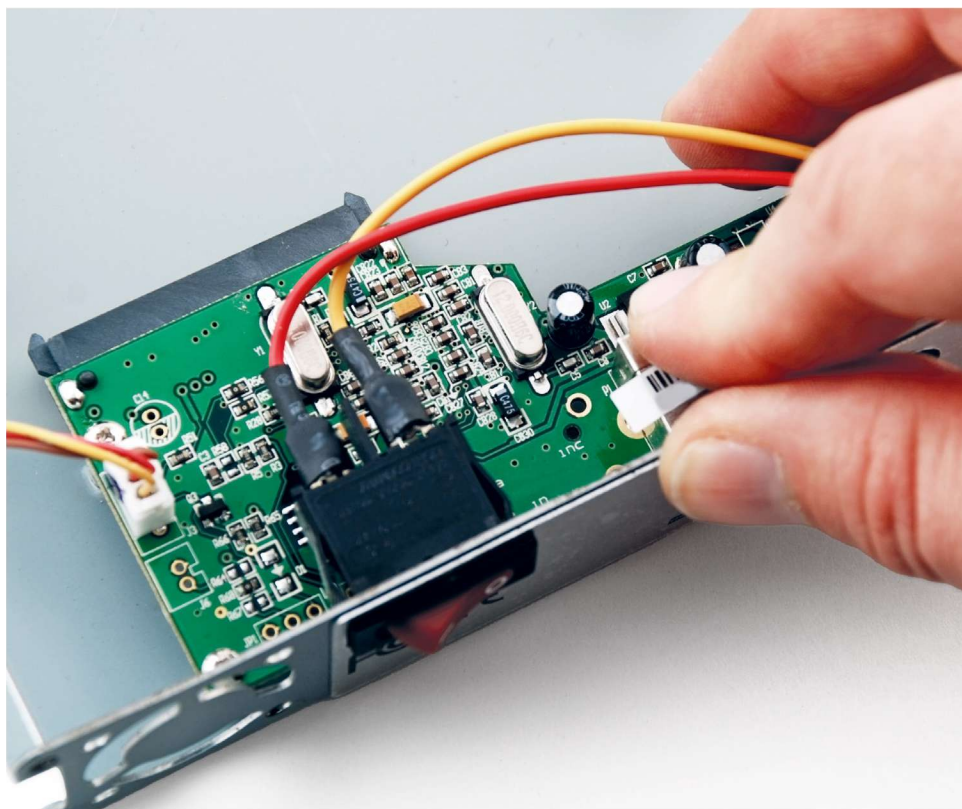
Somos® ProtoGen 18420 helps our customers produce various part properties based upon the machine exposure that fit a variety of applications.

Key Benefits

- Excellent durability
- Superior strength
- Outstanding accuracy

Ideal Applications

- Electronic covers
- Consumer products
- Snap fit assembly



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 cue-depth vs. ln (E) curve]
Density	~1.16 g/cm ³ @ 25°C	E₁₀	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)	20-22 J/m	0.37–0.41 ft-lb/in	N/A		15-18 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.

Find the Perfect Material for Your Application

From strength and flexibility to biocompatibility and color, our experts help you select materials that meet your part performance and production goals - every time.

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Advice