Somos® ProtoGen Family

Tough, high impact stereolithography materials that you can tailor to fit your needs.

Description

Somos® ProtoGen 18120
Whether you're in the electronics, automotive or aerospace industries, Somos® ProtoGen 18120 offers a translucent, ABS-like solution with high impact resistance. In addition, it is highly accurate, and humidity and temperature resistant – all of which enables your testing to run more smoothly.

Somos® ProtoGen 18420
When you need a high-heat and humidity resistant material for your parts, Somos® ProtoGen 18420 delivers the performance you need. This material creates accurate, easy-to-clean white parts, ideal for automotive and medical applications.

Somos® ProtoGen 18920
If you want the benefits of a temperature and humidity resistant material with a grey coloring, Somos® ProtoGen 18920 is your ideal solution. Thanks to its extreme accuracy and excellent finishing, your parts really will stand out from the crowd.

Benefits

- Tune the properties of the part to fit your needs
- Fast, easy processing & finishing
- Highly accurate

Applications

- Automotive parts
- Medical
- Consumer Products
- Electrical casings

CURBELL PLASTICS

HEALTH · NUTRITION · MATERIALS

DSM
BRIGHT SCIENCE. BRIGHTER LIVING.

Somos® ProtoGen Family Technical Data

Liquid Properties	Somos® ProtoGen 18120 (UV Postcure)	Somos® ProtoGen 18420 (UV Postcure)	Somos® ProtoGen 18920 (UV Postcure)
Appearance	Translucent	White	Opaque Grey
Viscosity	~300 cps @ 30°C	~350 cps @ 30°C	~350 cps @ 30°C
Density	~1.16 g/cm3 @ 25°C	~1.16 g/cm3 @ 25°C	~1.16 g/cm3 @ 25°C
Optical Properties	**Somos® ProtoGen 18120 (Postcure)**	**Somos® ProtoGen 18420 (Postcure)**	**Somos® ProtoGen 18920 (Postcure)**
Color	Translucent Pearl	White	Grey
E_C [critical exposure]	6.7 mJ/cm²	7.4 mJ/cm²	8 mJ/cm²
D_p [slope of cure-depth vs. ln (E) curve]	4.6 mils	4.2 mils	4.2 mils
E_{10} [exposure that gives 0.254 mm (.010 inch) thickness]	57 mJ/cm²	68.6 mJ/cm²	76 mJ/cm²

Mechanical Properties		Somos® ProtoGen 18120 (UV Postcure)		Somos® ProtoGen 18420 (UV Postcure)		Somos® ProtoGen 18920 (UV Postcure)	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial	Metric	Imperial
D638M	Tensile Modulus	2,680 MPa	389 ksi	2,250 MPa	326 ksi	2,210 MPa	321 ksi
D638M	Tensile Strength at Yield	53 MPa	7.7 ksi	43 MPa	6.2 ksi	47 MPa	6.8 ksi
D638M	Elongation at Break	9%		12%		16%	
D2240	Flexural Modulus	2,240 MPa	325 ksi	2,060 MPa	299 ksi	2,220 MPa	322 ksi
D256A	Izod Impact (Notched)	20 J/m	0.37 ft-lb/in	21 J/m	0.39 ft-lb/in	23 J/m	0.43 ft-lb/in
D2240	Hardness (Shore D)	85		87		86	
D570-98	Water Absorption	0.77%		0.68%		0.78%	
Thermal/Electrical Properties		**Somos® ProtoGen 18120 (UV Postcure)**		**Somos® ProtoGen 18420 (UV Postcure)**		**Somos® ProtoGen 18920 (UV Postcure)**	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial	Metric	Imperial
E831-05	C.T.E. -40 - 0°C (-40 - 32°F)	66 µm/m°C	47 µin/in°F	75 µm/m°C	42 µin/in°F	69 µm/m°C	39 µin/in°F
E831-05	C.T.E. 0 - 50°C (32 - 122°F)	90 µm/m°C	50 µin/in°F	106 µm/m°C	59 µin/in°F	74 µm/m°C	41 µin/in°F
E831-05	C.T.E. 50 - 100°C (122 - 212°F)	105 µm/m°C	59 µin/in°F	125 µm/m°C	70 µin/in°F	106 µm/m°C	59 µin/in°F
E831-05	C.T.E. 100 - 150°C (212 - 302°F)	151 µm/m°C	84 µin/in°F	134 µm/m°C	74 µin/in°F	130 µm/m°C	72 µin/in°F
D150-98	Dielectric Constant 60 Hz	3.5		3.6		3.5	
D150-98	Dielectric Constant 1 KHz	3.4		3.5		3.4	
D150-98	Dielectric Constant 1 MHz	3.2		3.2		3.2	
D149-97A	Dielectric Strength	15.5 V/mm	393 V/mil	14 V/mm	355 V/mil	14.8 V/mm	376 V/mil
D648	HDT @ 0.46 MPa (66 psi)	96°C	205°F	96°C	205°F	97°C	207°F

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

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07/2016 | SOMOS-NEXT-SS-PDS