

# ProtoGen™ 18920

## Technical Data: Mechanical Properties

		ProtoGen™ 18920 UV Postcure		ProtoGen™ 18920 UV Postcure at HOC +3*		ProtoGen™ 18920 UV & Thermal Postcure	
ASTM Method	Property Description	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%	5 – 12%	5 – 12%	4 – 9 %	4 – 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 – 335.6 ksi	2,442 – 2,518 MPa	354.2 – 365.2 ksi	2,504 – 2,696 MPa	363.1 – 391.0 ksi
D2240	Hardness (Shore D)	85 – 86	85 – 86	86 – 87	86 – 87	86 – 88	86 – 88
D256A	Izod Impact-Notched	0.18 – 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

		ProtoGen™ 18920 UV Postcure		ProtoGen™ 18920 UV Postcure at HOC +3*		ProtoGen™ 18920 UV & Thermal Postcure	
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	62.8°C	145°F	96.5°C	205°F
D648	HDT @ 1.81 MPa (264 psi)	51.0°C	123°F	53.3°C	128°F	78.6°C	175°F

\*The data in this column was collected from internal testing

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