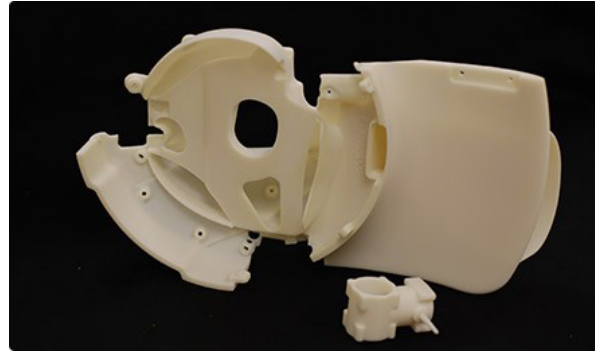


Somos PerFORM

Information provided by Somos

A ceramic-plastic composite, PerFORM exhibits exceptional rigidity and high temperature resistance, making it an ideal material for tooling and wind-tunnel testing. Additionally, PerFORM's innovative properties can be used for rapid tooling with injection molding, a perfect fit for the additive manufacturing industry.



Mechanical Properties		UV Postcure		Thermal Postcure	
Property Description	ASTM Method	Metric	English	Metric	English
Tensile strength	D638M	68 MPa	9.9 ksi	80 MPa	11.6 ksi
Tensile Modulus	D638M	10,500 MPa	1,520 ksi	9,800 MPa	1,420 ksi
Elongation at Break	D638M	1.1%		1.2%	
Poisson's Ratio	D638M	0.32		0.33	
Flexural Strength	D790M	120 MPa	17.4 ksi	146 MPa	21.2 ksi
Flexural Modulus	D709M	10,000 MPa	1,450 ksi	9,030 MPa	1,310 ksi
Izod Impact (Notched)	D256A	17 J/m	0.32 ft-lb/in	20 J/m	0.37 ft-lb/in
Hardness (Shore D)	D2240	94		93	
Water Absorption	D-570-98	0.2%		0.1%	

Thermal/Electrical Properties		UV Postcure		Thermal Postcure	
Property Description	ASTM Method	Metric	English	Metric	English
C.T.E. -40 - 0°C (-40 - 32°F)	E831-05	29.9 $\mu\text{m}/\text{m}^\circ\text{C}$	16.6 $\mu\text{m}/\text{m}^\circ\text{F}$	26.4 $\mu\text{m}/\text{m}^\circ\text{C}$	14.7 $\mu\text{m}/\text{m}^\circ\text{F}$
C.T.E. 0 - 50°C (32 - 122°F)	E831-05	49.4 $\mu\text{m}/\text{m}^\circ\text{C}$	27.4 $\mu\text{m}/\text{m}^\circ\text{F}$	34.3 $\mu\text{m}/\text{m}^\circ\text{C}$	19.1 $\mu\text{m}/\text{m}^\circ\text{F}$
C.T.E. 50 - 100°C (122 - 212°F)	E831-05	79.1 $\mu\text{m}/\text{m}^\circ\text{C}$	43.9 $\mu\text{m}/\text{m}^\circ\text{F}$	59.9 $\mu\text{m}/\text{m}^\circ\text{C}$	33.3 $\mu\text{m}/\text{m}^\circ\text{F}$
C.T.E. 100 - 150°C (212 - 302°F)	E831-05	80.9 $\mu\text{m}/\text{m}^\circ\text{C}$	45.0 $\mu\text{m}/\text{m}^\circ\text{F}$	94.7 $\mu\text{m}/\text{m}^\circ\text{C}$	52.6 $\mu\text{m}/\text{m}^\circ\text{F}$
Dielectric Constant 60 Hz	D150-98	4.0		4.0	
Dielectric Constant 1 KHz	D150-98	3.8		3.8	
Dielectric Constant 1 MHz	D150-98	3.6		3.6	
Dielectric Strength	D149-977A	26.3 kV/mm	668 V/mil	25.4 kV/mm	644 V/mil
Tg	E1545-11	72°C	162°F	81°C	178°F
HDT @ 0.46 MPa (66 psi)	D648	132°C	270°F	268°C	514°F
HDT @ 1.81 MPa (264 psi)	D648	82°C	180°F	119°C	246°F