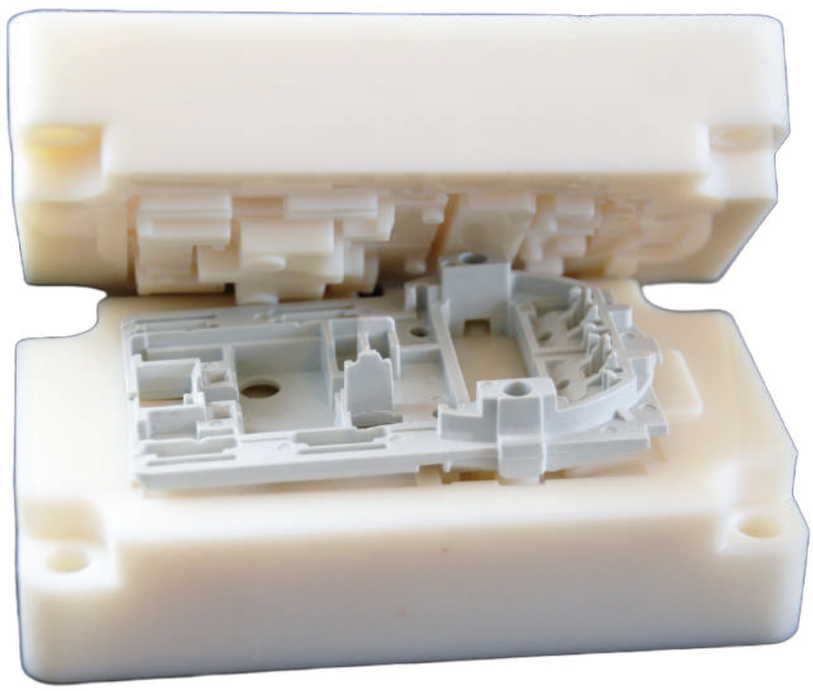
The Design to Manufacturing Co.



MATERIAL
PERFORM
OVERVIEW

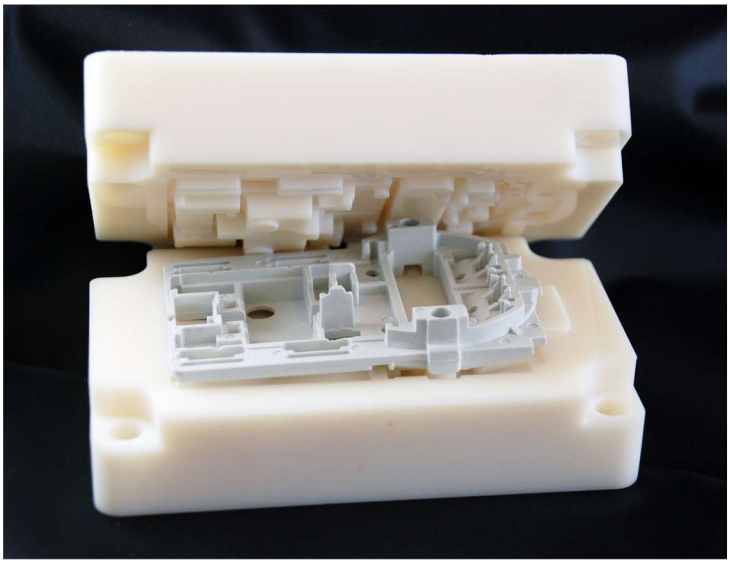
For more information or advice: theD2Mco.com/contact-us info@theD2Mco.com

Somos® PerFORM™

Stereolithography

Somos® PerFORM is the material of choice for applications that require strong, stiff, high temperature resistant composite parts. With its excellent high heat tolerance, outstanding detail resolution and stiffness, Somos® PerFORM is the ideal material for a variety of applications including tooling, wind tunnel testing, high temperature testing, electrical casings and automotive housings.

With the lowest viscosity of any composite stereolithography material, parts made from Somos® PerFORM are faster to build, easier to post-process clean, possess superior sidewall quality and provide unmatched detail resolution.



Key Benefits

- Excellent detail resolution
- Fast, easy processing & finishing
- Superior high heat tolerance

Ideal Applications

- Tooling
- Wind tunnel testing
- High temperature testing
- Electrical casings
- Automotive housings

LIQUID PROPERTIES		OPTICAL PROPERTIES		
Appearance	Off-White	E_C	7.8 mJ/cm^2	[critical exposure]
Viscosity	~1,000 cps @ 30°C	D_P	4.3 mils	[slope of cue-depth vs ln (E) curve]
Density	~1.61 g/cm^3 @ 25°C	E_{10}	80 mJ/cm^2	[exposure that gives 0.254 mm (.010 inch) thickness]

Data Sheet

MECHANICAL PROPERTIES		UV POSTCURE		THERMAL POSTCURE	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
D638M	Tensile Strength	68 MPa	9.9 ksi	80 MPa	11.6 ksi
D638M	Tensile Modulus	10,500 MPa	1,520 ksi	9,800 MPa	1,420 ksi
D638M	Elongation at Break	1.1%		1.2%	
D638M	Poisson's Ratio	0.32		0.33	
D790M	Flexural Strength	120 MPa	17.4 ksi	146 MPa	21.2 ksi
D790M	Flexural Modulus	10,000 MPa	1,450 ksi	9,030 MPa	1,310 ksi
D256A	Izod Impact (Notched)	17 J/m	0.32 ft-lb/in	20 J/m	0.37 ft-lb/in
D2240	Hardness (Shore D)	94		93	
D570-98	Water Absorption	0.2%		0.1%	

THERMAL/ELECTRICAL PROPERTIES		UV POSTCURE		THERMAL POSTCURE	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
E831-05	C.T.E. -40 – 0°C (-40 – 32°F)	29.9 µm/m°C	16.6 µin/in°F	26.4 µm/m°C	14.7 µin/in°F
E831-05	C.T.E. 0 – 50°C (32 – 122°F)	49.4 µm/m°C	27.4 µin/in°F	34.3 µm/m°C	19.1 µin/in°F
E831-05	C.T.E. 50 – 100°C (122 – 212°F)	79.1 µm/m°C	43.9 µin/in°F	59.9 µm/m°C	33.3 µin/in°F
E831-05	C.T.E. 100 – 150°C (212 – 302°F)	80.9 µm/m°C	45.0 µin/in°F	94.7 µm/m°C	52.6 µin/in°F
D150-98	Dielectric Constant 60 Hz	4		4	
D150-98	Dielectric Constant 1 KHz	3.8		3.9	
D150-98	Dielectric Constant 1 MHz	3.6		3.7	
D149-97a	Dielectric Strength	26.3 kV/mm	668 V/mil	25.4 kV/mm	644 V/mil
E1545-11	Tg	72°C	162°F	81°C	178°F
D648	HDT @ 0.46 MPa (66 psi)	132°C	270°F	268°C	514°F
D648	HDT @ 1.81 MPa (264 psi)	82°C	180°F	119°C	246°F

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