Somos® PerFORM

Stereolithography

Somos® PerFORM

A fast processing stereolithography material resulting in strong, stiff and accurate parts with high feature resolution.

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

Technical Data

Liquid Properties		Optical Properties		
Appearance	Off-White	E_C	7.8 mJ/cm²	[critical exposure]
Viscosity	~1,000 cps @ 30°C	D_P	4.3 mils	[slope of cure-depth vs. ln (E) curve]
Density	~1.61 g/cm³ @ 25°C	E_{10}	80 mJ/cm²	[exposure that gives 0.254 mm (.010 inch) thickness]

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/Electric 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.

More information at am.covestro.com

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