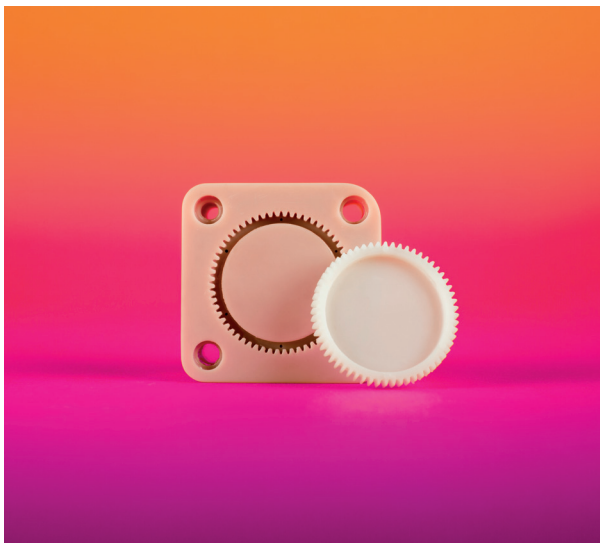
Somos® PerFORM™ HW

P3™, Digital Light Processing (DLP) & Liquid-crystal display (LCD)

Somos® PerFORM HW meets the critical requirement needed for P3™, Digital Light Processing (DLP) & Liquid-crystal display (LCD) 3D printing injection molds: high dimensional stability and minimal warpage.



Additive manufacturing offers a speedier development process, faster production, more design freedom and less total cost of ownership than traditional manufacturing. 3D printing also allows manufacturers to quickly and efficiently create multiple iterations before final production.

Creating injection molds for relatively low volumes or parts with fine or detailed features is time consuming and costly, but with digital light processing (DLP) or liquid crystal display (LCD) 3D printing, these barriers are removed. DLP and LCD printing offer fast printing speeds and have a lower cost of entry, making it more accessible to companies looking to transition to additive manufacturing. Plus, printing molds locally and on demand using DLP or LCD printing reduces unplanned downtime associated with injection mold maintenance.

Stratasys has developed **Somos® PerFORM HW**, a DLP-optimized version of its industry-leading **Somos® PerFORM**, which offers high stiffness and high temperature performance that is required for applications such as tools for injection molding.

Somos® PerFORM HW is robust and offers high dimensional stability and low warpage.
This resin is also ideal for applications that require steady performance in high pressure and harsh environments such as parts for wind tunnel testing.

Key Benefits

- High accuracy, low warpage to meet critical requirements
- Excellent detail resolution
- Superior high heat tolerance
- High stiffness
- Fast printing, easy processing and finishing
- Economical

Ideal Applications

- Tooling/injection molding, low volume production
- Electrical casings, consumer electronics
- Consumer medical applications, personalized consumer medical applications
- Automotive housings, automotive spare parts
- High temperature testing – functional prototyping
- Jigs and fixtures
- Wind tunnel testing

Data Sheet

LIQUID PROPERTIES		OPTICAL PROPERTIES		
Appearance	Off-white	E_C	4.42 mJ/cm²	[critical exposure]
Viscosity	~1,000 cps @ 30°C	D_P	8.2 mm	[slope of cue-depth vs. in (E) curve]
Density	~1.65 g/cm³ @ 25°C	E_{10}	15 mJ/cm2	[exposure that gives 0.254 mm (0.10 inch) thickness]

MECHANICAL PROPERTIES		UV ONLY		UV AND THERMAL POSTCURE	
ASTM Method	**Property Description**	**Metric**	**Imperial**	**Metric**	**Imperial**
D638M	Tensile Modulus	10,140 MPa	1,471 ksi	9,000 MPa	1,305 ksi
D638M	Tensile Modulus	57 MPa	8 ksi	87 MPa	13 ksi
D638M	Tensile Elongation at Break	0.97%		1.4%	
D790M	Flexural Modulus	9,400 MPa	1,363 ksi	8,700 MPa	1,262 ksi
D790M	Flexural Strength	56 MPa	8 ksi	60 MPa	9 ksi
D256	IZOD Impact, Notched	20 J/m	0.37 ft-lb/in	18 J/m	0.34 ft-lb/in
D570-98	Water Absorption	0.2%		0.1%	
D648	HDT @ 0.46 MPa (66 psi)	292°C	558°F	289°C	552°F
D648	HDT @ 1.81 MPa (264 psi)	93°C	199°F	160°C	320°F

THERMAL/ELECTRICAL PROPERTIES		UV ONLY		UV AND THERMAL POSTCURE	
ASTM Method	**Property Description**	**Metric**	**Imperial**	**Metric**	**Imperial**
DMTA	Glass Transition, Tan Delta	121°C	250°F	160°C	320°F

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

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