

## Caverna™ ST Microporous Elastomeric Build Material for Additive Manufacturing

Rev 2: 9/8/23

GENERAL INFORMATION								
Resin	Elastomer Composite							
Form	Filament (1.75mm, 2.85mm) or Pellets							
Color	Beige filament. Printed articles become white after full dissolution.							
PHYSICAL PROPERTIES		PRE-DISSOLUTION		POST-DISSOLUTION		UNITS	METHOD	
Specific Gravity	1.14		0.9		N/A	ASTM D792		
Durometer <sup>1</sup>	91 A		52 A		N/A	ASTM D2240		
MECHANICAL PROPERTIES								
	Injection Molded		XY-Axis Print		Z-Axis Print		Units	Method
	Pre	Post	Pre	Post	Pre	Post		
Tensile Strength	3,300	550	610	150	280	50	psi	ASTM D638
Tensile Modulus	225,000	5,200	50,000	2,500	60,000	1,700	psi	ASTM D638
Tensile Elongation @ Break	3.4	160	3.0	16.7	0.6	10.8	%	ASTM D638
Flexural Strength	4,400	280	950	100	—	—	psi	ASTM D790
Flexural Modulus	210,000	6,400	43,000	2,700	—	—	psi	ASTM D790
IZOD Impact, Notched	0.5	No Break	0.4	0.7	—	—	ft-lb/in	ASTM D256
IZOD Impact, Unnotched	4.1	No Break	0.8	0.9	—	—	ft-lb/in	ASTM D4812
Heat Deflection Temperature (0.45 MPa)	62		49		—	—	°C	ASTM D648
Coefficient of Linear Thermal Expansion	6.40E-05	1.07E-04	6.10E-05	—	—	—	in/in°C	ASTM D696
RECOMMENDED PRINT SETTINGS								
Extruder Inlet Temperature	100-150°C							
Extruder Outlet Temperature	200-260°C							
Chamber Temperature	Ambient to 70°C							
Build Plate Temperature	50-75°C							
Build Plate Material	Glass							
Build Plate Adhesive	Optional							
Nozzle Size (mm)	0.8							
Layer Height (mm)	0.4							
Print Speed (mm/s)	30-60							
Post Processing	Soluble Phase Removal in Tap Water 50-70°C with Agitation							
Feedstock Drying Conditions (Optional)	70°C for 3-4 hours							
THERMAL PROPERTIES								
Melt Flow Index 230°C; 5kg g/10 minutes	43.5							
Glass Transition Temperature	65°C							

<sup>1</sup> Durometer tested on XY printed bar with 80% lines infill. Durometer was measured transversely (on the bar's edge). Hardness can be easily modified with printing and infill conditions.

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### STORAGE CONDITIONS

Caverna ST should be kept in sealed moisture barrier packaging with desiccant when not in use.

Caverna may absorb moisture if stored outside of its packaging. If print quality diminishes, dry the filament at 70°C for 3-4 hours in a low-humidity environment.

### POST-PROCESSING INSTRUCTIONS

Soak Caverna ST prints in 70°C water for at least 8 hours. Larger, bulkier parts may require longer time. Rinse with fresh water, then dry at 60°C for at least 6 hours. Refer to Caverna ST user guide for more information.

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