

Stereolithography (SL) Material:

Accura[®] si 50 Natural Accura si 50 Grey



For use with the Viper™ SLA[®] system, SLA 3500, SLA 5000 and SLA 7000 systems.

Durable, accurate SL material that simulates molded ABS and which is equally well suited for functional prototypes and master patterns.

Features & Benefits:

Durable and accurate SL material

- Versatile enough for general-purpose part building
- Little or no shrinkage-related distortion compared to other "durable" materials
- Accurate enough for use as a master pattern for urethane casting, and durable enough for easy de-molding
- Durable and flexible enough for snap-fits and assemblies
- Stiff enough for rigid and robust thin walls
- Withstands vigorous testing better than other general-purpose materials
- Returns to shape after flexing due to good memory properties

ABS plastic properties

- Flexural modulus/stiffness similar to molded ABS
- Choice of grey and natural (ivory-white) color, simulating production plastic parts
- Smooth and shiny side walls resembling molded parts
- Reduced dependence on CNC machining and molding processes to create parts with an ABS-like appearance

Easy post processing

- Cleans easily with traditional solvents, leaving little residue, unlike ABS simulants from other suppliers
- Supports easy and quick removal without chipping
- Smooth side walls and excellent surface finish minimizes post-processing time and effort

Fully developed and tested build styles from 3D Systems

- Plug & play styles eliminate the need for user "experimentation"
- Highly reliable and consistent styles deliver an outstanding build success rate

Applications:

- Functional components for assemblies, mock-ups and test for many uses, including:
 - Enclosures, covers and cases for consumer goods
 - Toys
 - Cellular/mobile telephones
 - Electronic components: connectors, interconnects, routing enclosures, etc.
 - Automotive design elements: dashboards, air-conditioning vents, etc.
- Accurate, durable master patterns for RTV/silicone molding
- Snap-fit assemblies
- Replace CNC machining of ABS to produce short-run plastic parts
- Simulate a molded part
- Concept models
- Marketing models



At left:
Printer assembly of production (blue) parts and prototypes produced with si 50 grey and natural material

Inset (top):
Close-up of natural color part produced with Accura si 50 SL material

Expert Testimonial

"si 50 is a versatile, reliable material that is the best we've seen in our more than 10 years in business. We've experienced a 100% build success rate which saves us time and money. It is an excellent general-use material with ABS-like properties that is as well suited for models, snap-fits and functional prototypes as it is for master patterns. This provides us with greater flexibility to meet our customers' needs."

Ron Belknap - Managing Partner, ProtoCAM

Specifications - Accura si 50 SL materials

For use with the Viper SLA system, SLA 3500, SLA 5000 and SLA 7000 systems.

Liquid Material

MEASUREMENT	CONDITION	VALUE:	
Appearance		Opaque natural or opaque grey	
Liquid Density	@ 25 °C (77 °F)	1.15 g/cm ³	
Solid Density	@ 25 °C (77 °F)	1.21 g/cm ³	
Viscosity	@ 30 °C (86 °F)	600 cps	
Penetration Depth (Dp) *		4.5 mils	
Critical Exposure (Ec) *		9.0 mJ/cm ²	
Tested Build Styles		FAST™, EXACT™, Exact HR	

Post-cured Material

MEASUREMENT	CONDITION	VALUE:	VALUE:
Tensile Strength	ASTM D 638	48 - 50 MPa	7,030 - 7,240 PSI
Tensile Modulus	ASTM D 638	2,480 - 2,690 MPa	360,000 - 390,000 PSI
Elongation at Break (%)	ASTM D 638	5.3 - 15.0 %	
Flexural Strength	ASTM D 790	72 - 77 MPa	10,400 - 11,200 PSI
Flexural Modulus	ASTM D 790	2,210 - 2,340 MPa	320,000 - 340,000 PSI
Impact Strength (Notched Izod)	ASTM D 256	16.5 - 28.1 J/m	0.31 - 0.51 ft-lbs/in
Heat Deflection Temperature	ASTM D 648		
	@ 66 PSI	49 - 53 °C	120 - 127 °F
	@ 264 PSI	43 - 46 °C	109 - 115 °F
	@ 66 PSI with Thermal Postcure	74 - 80 °C	165 - 176 °F
Hardness, Shore D		86	
Co-efficient of Thermal Expansion	ASTM E 831-93		
	TMA (T < T _g , 0 - 20 °C)	73 x 10 ⁻⁶ m/m °C	
	TMA (T > T _g , 90 - 150 °C)	164 x 10 ⁻⁶ m/m °C	
Glass Transition (T _g)	DMA, E''	62 °C	144 °F

* Dp/Ec values are the same on all systems.



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