



ACCURA™

SI 10 MATERIAL

for the SLA® Viper si2™, 3500, 5000 and 7000 systems

SOLID IMAGING MATERIALS



Accura SI 10 material combines high green strength, humidity resistance and 3D Systems process advancements to produce accurate, high quality parts without compromising speed.

Fast, versatile material

Accura SI 10 material has an excellent combination of high green strength and recoatability, requiring no pre-dip delay and minimal z wait time – which makes it up to 40% faster* than competing SL material. Process advancements from 3D Systems are incorporated into the build styles resulting in speed without compromising on part quality.



Ideal for QuickCast™ patterns

An investment casting material should have high green strength that allows the use of wide hatch spacing for better drainage and a stable material that does not thicken prematurely. Accura SI 10 material combines all those qualities with a low ash content, making it ideal for QuickCast patterns.

Accurate, stable parts

Low linear and differential shrinkage values are essential for good accuracy. Accura SI 10 material has market-leading accuracy. Furthermore, the combination of accuracy and its ability to maintain its rigidity irrespective of the environment makes Accura SI 10 material ideal for precision prototyping.

Outstanding part quality

With optical clarity, smooth side walls, a near-mirror top surface, tack-free down face, parts built with the SI 10 material require minimal finishing. A thin cured line-width produces excellent feature resolution.



Long vat life

The Accura SI 10 material maintains good recoating characteristics and low viscosity without adding viscosity stabilisers, resulting in consistent, trouble-free building.

High part yield

Layer to layer adhesion ensures good sidewalls without delamination. Good green strength prevents build failure on thin geometries. Accura SI 10 material provides the optimum blend of green strength and layer to layer adhesion to produce a high yield, consistent build process.

Build process you can depend on

3D Systems invests time and highly trained resources to develop and optimise the build parameters to maximise accuracy, part quality and throughput for the Accura SL materials to reduce overall labour time.

Typical Applications

- Multi-purpose models
- RTV mould patterns
- Form/Fit/Function
- QuickCast patterns for investment casting
- Master patterns for secondary processes
- Prototype tooling

*On the SLA 5000 and 7000 systems

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Typical Properties

Liquid Material

MEASUREMENT	CONDITION	ND LASER
Appearance		Clear amber
Density	@ 25 °C	1.1 g/cm ³
Viscosity	@ 30 °C	485 cps
Penetration depth (Dp) ^{1,3}		0.127 mm
Critical exposure (Ec) ^{1,3}		13.2 mJ/cm ²
Tested build styles		EXACT™ FAST™ QuickCast™ ThinLayer™ (Not available on Viper si2 SLA system) EXACTHR (Viper si2 SLA system only)

¹ Dp and Ec values are not reliable indicators on throughput as throughput is affected by overhead time, layer thickness and part geometry

Post-Cured Material ²

MEASUREMENT	CONDITION	ND LASER ³
Tensile strength 90-minute UV post-cure	ASTM D 638	64–65 MPa
Elongation at break	ASTM D 638	4.6–5 %
Tensile Modulus	ASTM D 638	3100–3307 MPa
Flexural strength	ASTM D 790	91–94 MPa
Flexural modulus	ASTM D 790	2618–2756 MPa
Impact strength Notched Izod	ASTM D 256	16–18.2 J/m
Heat deflection temperature 90-minute UV post-cure	ASTM D 648 @ 0.45 MPa @ 1.8 MPa	59 °C 53 °C
Glass Transition, Tg	DMA, E''	61 °C
Coefficient of thermal expansion 90-minute UV post-cure	ASTM E 831–93 TMA (T<Tg) TMA (T>Tg)	67.9 x 10 ⁻⁶ m/m °C 186 x 10 ⁻⁶ m/m °C
Hardness, Shore D	ASTM D 2240	86

² Mechanical properties reported are determined after conditioning of the parts at 50% RH and 23 °C for a period greater than 72 hours as specified by ASTM standards. Mechanical properties of parts without this conditioning may be different from values reported.

³ Testing was performed on an SLA 3500 system.

MATERIAL UPGRADE PROGRAMME:

Upgrade your existing material and take advantage of a substantial discount off the regular purchase price with 3D Systems Material Upgrade Programme. For UK and Ireland please dial +44 (0) 1442 282600, for all other countries dial +49 (0) 6151 357 357.



the solid imaging company

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P/N 70484 Rev. 02/03-UK liedler.de