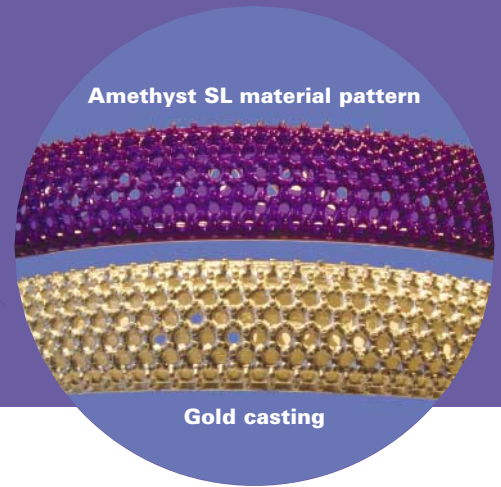


ACCURA[®] AMETHYST SL MATERIAL

for the Viper si2 SLA[®] system

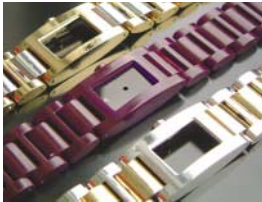
SOLID IMAGING MATERIALS



Automated, unattended production of high quality, accurate jewellery patterns and master models.

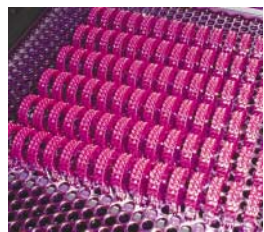
The Opportunity – Fast, Automated and Unattended Jewellery Production

Eliminate manual, tedious and labour-intensive fabrication or machining to produce models or patterns. Transition from 3-D CAD or digital data to high quality models and patterns in a few hours with this automated, advanced digital manufacturing (ADMSM) technology from 3D Systems.



Produce prototypes of your design in hours instead of days with Accura Amethyst SL material and the Viper SLA system. Amethyst models (centre) can be plated (top and bottom).

Present, test, and sell your jewellery – before its ever produced – with outstanding quality design models. Create highly repeatable duplicates, symmetric matched-pair ear-rings, and size variations – in little time. Save precious metal through producing exact wall thicknesses, maximum scooped models and identical looking designs of different weights and sizes. Guarantee an equal look of ensemble components and save labour cost by reproducing precise dimensions for stone settings. Capitalise on the unique processing capabilities of Amethyst SL material and gain a clear and compelling competitive advantage by accelerating production processes, thus reducing the cost of delivering your jewellery to market.



Produce models, pattern masters, design alternatives, or size variations in a single build. This platform of 90 rings was built in 16.2 hours – automatically.

The Solution

3D Systems' Viper SLA system with the new Amethyst SL material is used by leading jewellery manufacturers worldwide for the advanced digital manufacturing of high quality patterns and master models with fine detail resolution.

Amethyst SL material has been developed especially to meet the needs of today's jewellery industry for fast pattern and master model production with best surface finish and finely detailed structures.



Use rubber moulding to create multiple wax patterns for casting.

Attributes that Innovative Jewellery Manufacturers Appreciate

Ultra-precise part building hardware and jewelry-specific software to deliver a superior part production system for jewellery manufacturers. Ultra-fine adjustable layer building capabilities of just 0.025 mm (0.001 in) produces parts with unequalled surface finish, feature resolution and quality. Superior quality translates to accurate representations of your jewellery designs to be used in casting, moulding, plating or other applications. Contrast-rich amethyst colour eases visual inspection and simplifies demoulding.



Viper SLA system

Gain a Tremendous Competitive Advantage

- Eliminate wax models for small series production
- Speed up mass production with Amethyst SL material master models for manufacturing of rubber molds
- Direct casting to produce customised jewellery and one-of-a-kind jewellery

Applications:

- Patterns for room temperature (RTV) moulding
- Patterns for high temperature (HTV) moulding
- Design evaluation models
- Marketing models for metal plating
- Patterns for direct casting

Benefits:

- Colour offers excellent feature definition and contrast for visual inspection
- Outstanding part quality
- Superior feature detail
- Highly accurate



Accura Amethyst SL Material

for the Viper si2 SLA® system

Typical Properties



the solid imaging company

Liquid Material

MEASUREMENT	CONDITION	SOLID STATE Nd: YVO ₄
Appearance		Purple
Density	@ 25 °C	1.1 g/cm ³
Viscosity	@ 30 °C	350 cps
Penetration depth (Dp) ¹		0,094 mm
Critical exposure (Ec) ¹		14.4 mJ/cm ²
Tested build styles		EXACT (0.0500 mm) EXACTHR (0.0500 mm) ThinLayer (0.0250 mm)

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Post-Cured Material ²

MEASUREMENT	CONDITION	90-MINUTE UV VIPER si2 SLA SYSTEM
Tensile strength	ASTM D 638	22–38 MPa
Elongation at break	ASTM D 638	0.56–1.04 %
Tensile Modulus	ASTM D 638	3,514–3,996 MPa
Flexural strength	ASTM D 790	87–125 MPa
Flexural modulus	ASTM D 790	3,652–3,721 MPa
Impact strength – Notched Izod	ASTM D 256	9–12 J/m
Heat deflection temperature	ASTM D 648 @ 0.45 MPa @ 1.8 MPa	77 °C 62 °C
Glass transition, Tg	DMA, E''	103 °C
Coefficient of thermal expansion	ASTM E 831–93 TMA (T<Tg) TMA (T>Tg)	57 x 10 ⁻⁶ m/m °C 133 x 10 ⁻⁶ m/m °C
Hardness, Shore D	ASTM D 2240	87

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

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.

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