

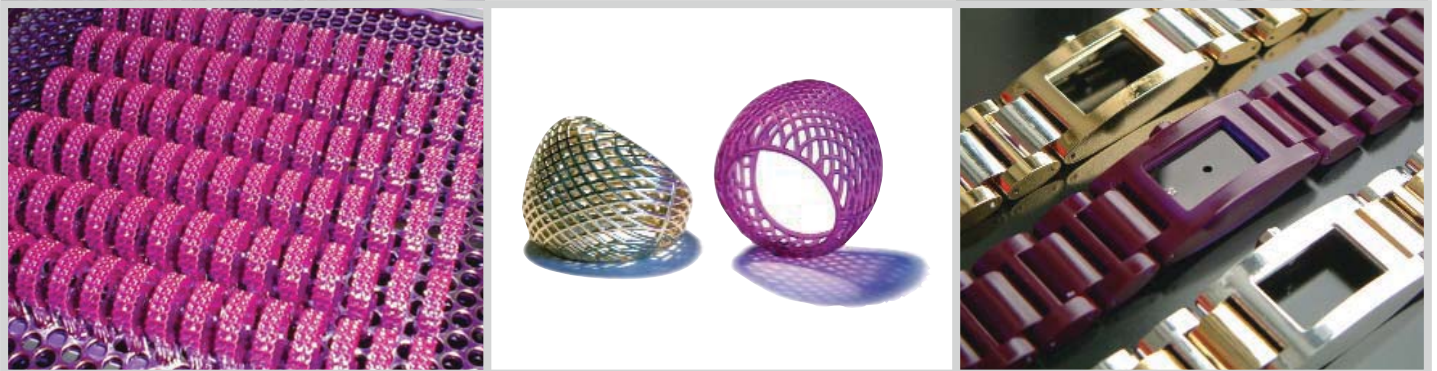
Services Provided By

PROTO3000
3D Engineering Solutions

Accura[®] Amethyst[™] material

for use with Viper[™] SLA[®] systems

Optimized for the rapid and automated production of patterns and master molds for jewelry manufacturing.



At left: 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.
At right: Amethyst models (center) can be plated (top and bottom) or painted.

APPLICATIONS

- Patterns for use with low and high vulcanizing rubber molding
- High resolution concept models

FEATURES

- Outstanding accuracy
- Exceptional detail
- High thermal resistance
- Deep purple color
- Low ash formulation

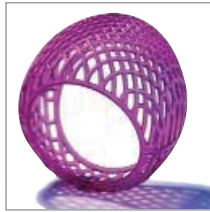
BENEFITS

- Parts are accurately produced in X, Y and Z
- Small details are faithfully reproduced
- Patterns are compatible with high temperature rubber molding operations
- Produces parts in a high contrast color for easy identification
- Material can be burned out for direct casting

Accura® Amethyst™ material

For use with Viper™ SLA® systems

A high-resolution casting pattern is produced on the Viper SLA system using Amethyst material.



Rubber molding is used to create multiple wax patterns for casting.



The final production ring.



Images courtesy of Alberto Bolzonella

TECHNICAL DATA

Liquid Material

MEASUREMENT	CONDITION	VALUE:
Appearance		Purple
Liquid Density	@ 25 °C (77 °F)	1.1 g/cm ³
Solid Density	@ 25 °C (77 °F)	1.23g/cm ³
Viscosity	@ 30 °C (86 °F)	350 cps
Penetration Depth (Dp)		3.7 mils
Critical Exposure (Ec)		14.4 mJ/cm ²
Tested Build Styles		FAST™, EXACT™, Exact HR

Post-cured Material

MEASUREMENT	CONDITION	VALUE:
Tensile Strength	ASTM D 638	22 - 38 MPa (3130 - 5450 PSI)
Tensile Modulus	ASTM D 638	3514 - 3996 MPa (510 - 580 PSI)
Elongation at Break (%)	ASTM D 638	0.56 - 1.04 %
Flexural Strength	ASTM D 790	87 - 125 MPa (12700 - 18100 PSI)
Flexural Modulus	ASTM D 790	3652 - 3721 MPa (530 - 540 PSI)
Impact Strength (Notched Izod)	ASTM D 256	9 - 12 J/m (0.16 - 0.23 ft-lbs/in)
Heat Deflection Temperature	ASTM D 648	
	@ 66 PSI	77 °C (170.6 °F)
	@ 264 PSI	62 °C (143.6 °F)
Hardness, Shore D		87
Co-efficient of Thermal Expansion	ASTM E 831-93	
	TMA (T<Tg, 0 - 20°C)	57 x 10 ⁻⁶ m/m °C
	TMA (T>Tg, 90 - 150°C)	133 x 10 ⁻⁶ m/m °C
Glass Transition (Tg)	DMA, E''	103 °C (217.4 °F)

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