



# Accura<sup>®</sup> Phoenix

## High Temperature Class

Stereolithography (SLA)

A unique combination of clarity and high temperature resistance.

### APPLICATIONS REQUIRING CLARITY AT ELEVATED TEMPERATURE

Accura Phoenix is a thermally resistant plastic with exceptional clarity that enables applications at high temperature requiring transparency, improving viewing of hot fluid flow in complex automotive parts as well as viewing of internal structures in assembly work.

Formulated without the addition of antimony, Accura Phoenix produces exceptionally clear parts with an heat deflection temperature (HDT) greater than 80 °C/176 °F without thermal postcure. However, parts can be thermally postcured to unlock a HDT of over 130 °C/270 °F.

### Liquid Material

MEASUREMENT	CONDITION	VALUE
Viscosity	@ 30 °C (86 °F)	120-130 cps
Penetration Depth (Dp)		6.4 mils
Critical Exposure (Ec)		11.7 mJ/cm <sup>2</sup>
Color		Clear/Transparent
Liquid Density	@ 25 °C (77 °F)	1.13 g/cm <sup>3</sup>   0.04 lbs/in <sup>3</sup>

#### Printer Compatibility/Packaging:

ProJet <sup>®</sup> 6000/7000 SLA printers:	2L cartridge
ProX <sup>®</sup> 800/950, iPro <sup>™</sup> 8000/9000 SLA printers:	10 kg cartridge
Viper si2 <sup>™</sup> and SLA 7000 printers:	10 kg standard bottle

### APPLICATIONS

- Thermally resistant transparent prototypes
  - Hot fluid flow visualization
  - HVAC components
  - Under the hood testing
  - Internal structures visualization
  - Complex assembly work
  - Small engine enclosures
  - Fans, heaters and humidifier
  - Plastic components for lighting design

### BENEFITS

- Heat resistance over 130 °C/270 °F
- High clarity
- Low viscosity easy-to-use formulation

### FEATURES

- Over 130 °C/270 °F temperature resistance after thermal postcure
- Over 80 °C/176 °F temperature resistance without thermal postcure
- Transparent material
- Moderate stiffness and rigidity
- Antimony-free





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### Post-Cured Material

MECHANICAL PROPERTIES		LARGE FRAME SLA PRINTERS				PROJET SLA PRINTERS	
MEASUREMENT	CONDITION	METRIC (PCA ONLY)	METRIC (THERMAL PC <sup>1</sup> )	U.S. (PCA ONLY)	U.S. (THERMAL PC <sup>1</sup> )	METRIC	U.S.
Tensile Strength (MPa   PSI)	ASTM D 638	45-61	52-77	6530-8850	7540-11170	65	9430
Tensile Modulus (MPa   KSI)	ASTM D 638	2340-2640	2620-2940	339-383	380-426	2660	386
Elongation at Break	ASTM D 638	3-5 %	2-6 %	3-5 %	2-6 %	7 %	
Flexural Strength (MPa   PSI)	ASTM D 790	96-100	123-139	13920-14500	17840-20160	103	14940
Flexural Modulus (MPa   KSI)	ASTM D 790	2140-2330	2290-2410	310-338	332-350	2470	358
Impact Strength (J/m   Ft-lbs/in)	ASTM D 256	13-19	18-23	0.2-0.4	0.3-0.4	24	0.5
Heat Deflection Temperature @ 0.45 MPa (66 PSI) @ 1.82 MPa (264 PSI)	ASTM D 648	83 °C	137 °C	181 °F	279 °F	72/129 <sup>1</sup> °C 65/104 <sup>1</sup> °C	162/264 <sup>1</sup> °F 149/219 <sup>1</sup> °F
		64 °C	103 °C	147 °F	217 °F		
Coefficient of Thermal Expansion (CTE) (µm/m-°C / µm/in-°F)	ASTM E 831-93 20-50 °C 60-90 °C 80-120 °C	41.3	56.7	22.9	31.5	NA	NA
		96.6	NA	53.7	NA	NA	NA
		NA	65.7	NA	36.5	NA	NA
Glass Transition (Tg)	DMA, E''	63 °C	NA	145 °F	NA	63/83 <sup>1</sup> °C	145/181 <sup>1</sup> °F
Hardness, Shore D		80				80	
Solid Density (g/cm <sup>3</sup>   lbs/in <sup>3</sup> )	@ 25 °C (77 °F)	1.19	0.043	1.19	0.043	1.19	0.043

<sup>1</sup> After thermal postcure at 80 °C



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