

Services Provided By

PROTO3000
3D Engineering Solutions

Accura[®] 50 plastic

for use with solid-state stereolithography (SLA[®]) systems

Simulate the properties and appearance of molded ABS with this durable, accurate and versatile plastic.



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: dash boards, air conditioning vents, etc.
- Accurate, durable master patterns for RTV or silicone molding
- Limited snap-fits and assemblies
- Simulate a molded part
- Concept models
- Marketing models

FEATURES

- Durable and stiff
- Outstanding accuracy w/out shrinkage related distortion
- Choice of grey or natural colors
- Fully developed and tested build styles

BENEFITS

- Produce ABS like parts without machining or molding
- Color selection produces parts that have the appearance of molded plastic
- Rigidity holds shape on thin walls, but flexes for snap fit assemblies
- Produces parts that meet tolerances
- Produces parts that are faithful to the CAD
- Maximize reliability with no user R&D

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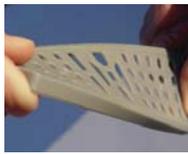
"Accura 50 is a versatile, reliable material that is the best we've seen in our more than 10 years in business. We've experienced a 100% build success rate which saves us time and money. It is an excellent general-use material with ABS-like properties that is as good for models, snap-fits and functional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

-- Ron Belknap - Managing Partner, ProtoCAM

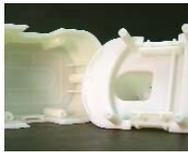
Nine piece Accura 50 grey and natural prototype assembly.



Accura 50 plastic is a tough, resilient material.



Accura 50 natural plastic material.



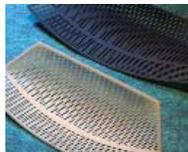
Printer assembly of production (blue) and Accura 50 grey and natural plastic parts.



Accura 50 plastic looks like a molded ABS part.



Pair of dishwasher components (grey and natural) produced for functional testing.



TECHNICAL DATA

Liquid Material

MEASUREMENT	CONDITION	VALUE:
Appearance		Opaque natural or opaque grey
Liquid Density	@ 25 °C (77 °F)	1.14 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:
Tensile Strength	ASTM D 638	48 - 50 MPa (7,030 - 7,240 PSI)
Tensile Modulus	ASTM D 638	2,480 - 2,690 MPa (360 - 390 KSI)
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 - 340 KSI)
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 160 °C 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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