TECHNICAL DATA SHEET

Alpha Black Resin

BUY NOW

Material Code : FLAPBK01 | **Datasheet Version** : V1 | **Revision Date** : September 28, 2026 | **Category** : General Purpose Resin | Safety Datasheet

Material Properties | Thermal Properties | General Properties | Green Properties | Biocompatibility | Workflow

Material Properties

Mechanical Properties

	Default Post-Cure	Max Strength Post-Cure	Method [1,2]
Tensile Properties			
Ultimate Tensile Strength	42 MPa [6100 psi]	46 MPa [6700 psi]	ASTM D638, Type 1
Tensile Modulus	2020 MPa [290 ksi]	2240 MPa [320 ksi]	ASTM D638, Type 1
Elongation at Break	36%	24%	ASTM D638, Type 1
Flexural Properties			
Flexural Strength	65 MPa [9400 psi]	81 MPa [12000 psi]	ASTM D790
Flexural Modulus	1830 MPa [270 ksi]	2190 MPa [320 ksi]	ASTM D790
Toughness Properties			
Izod Impact Strength (Unnotched)	178 J/m [3.33 (ft· lb)/in]	216 J/m [4.05 (ft· lb)/in]	ASTM D4812
Izod Impact Strength (Notched)	33 J/m [0.62 (ft· lb)/in]	33 J/m [0.62 (ft· lb)/in]	ASTM D256

Thermal Properties

Thermal Properties	Default Post-Cure	Max Strength Post-Cure	Method [1,2]
Heat Deflection Temp. at 1.8 MPa	48.1 °C [119 °F]	50.4 °C [123 °F]	ASTM D648
Heat Deflection Temp. at 0.45 MPa	55.5 °C [132 °F]	58 °C [136 °F]	ASTM D648
Glass Transition Temp (Tg)	91 °C [196 °F]	99 °C [210 °F]	DMA, Tension mode

General Properties

	Default Post-Cure	Method [1,2]
Bulk Density	1.22 g/cm^3 [0.0441 lb/in^3]	ASTM D792
Liquid Density	1.11 g/cm^3 [0.0401 lb/in^3]	ASTM D792
Shore Hardness	72D	ASTM D2240-15

	Default Post-Cure	Method [1,2]
Viscosity at 25 °C	600 cP	ASTM D7867

Green Properties

	No Post-Cure	Method [1]
Ultimate Tensile Strength	35 MPa [5080 psi]	ASTM D638, Type 1
Tensile Modulus	1670 MPa [242 ksi]	ASTM D638, Type 1
Elongation at Break	45%	ASTM D638, Type 1

Biocompatibility

View the Biocompatibility Certification for Alpha Black Resin

Workflow

Printer Compatibility

Platform	Printer	Compatibility	Resin Tank
Form Studio 1	Form Studio 1	Supported	Form Studio Resin Tank
Form 4	Form 4	Incompatible Use Black Resin V5	N/A
	Form 4B		
	Form 4L		
	Form 4BL		
Form 3	Form 3/+	Incompatible Use Black Resin V4.1	N/A
	Form 3B/+		
	Form 3L		
	Form 3BL		

Supported: Dispensing will be enabled and print settings are available in PreForm.

Compatible: Automatic dispensing from cartridges is enabled, but the user will be responsible for settings tuning. If printing on Form Studio 1, Resin Tank Pro must be used. Mechanical properties may not be equivalent to those published here.

Incompatible: Open Material Mode required, and automatic dispensing from cartridge is disabled. Mechanical properties may not be equivalent to those published here.

Post-Processing

Step	Recommended Hardware	Default	Max Strength
Washing	Form Wash V2 Form Wash L V2 Form Studio Wash+Cure	5 minutes or until clean*	
Drying	--	30 minutes at room temperature, or use compressed air	
Post-Curing	Form Studio Wash+Cure	5 minutes	N/A
	Form Cure V2 Form Cure L V2	1 minute at room temperature	5 minutes at 60 °C

*Use >90% IPA or Resin Washing Solution

Handling and Storage

Shelf-life	2 years
Storage temperature	10 - 25 °C

Storage and handling notes

Review Safety Data Sheet to ensure safe handling, storage, and disposal.
Shake resin cartridges before printing to ensure the resin is thoroughly mixed.
To avoid contamination, do not pour resin back into cartridges.
For best performance and shelf life keep opened resin away from direct light.
Short-term freezing during shipping is generally not detrimental to shelf life. Thaw and shake the resin cartridge thoroughly before use.
High temperatures decrease shelf life. Transient high temperature conditions (e.g., during shipping) should have a minimal effect.

Footnotes

1. Material properties may vary based on part geometry, print orientation, print settings, temperature, and disinfection or sterilization methods used.
2. Data was obtained from parts printed on a Form Studio 1 printer with 100 µm Alpha Black Resin V1 settings, washed in Form Studio Wash+Cure for 5 minutes in ≥99% Isopropyl Alcohol, and post-cured according to the corresponding column description.