

# Standard

## Materials for High-Resolution Rapid Prototyping

**High Resolution.** For demanding applications, our carefully-engineered resins capture the finest features in your model.

**Strength and Precision.** Our resins create accurate and robust parts, ideal for rapid prototyping and product development.

**Surface Finish.** Perfectly smooth right out of the printer, parts printed on the Form 2 printer have the polish and finish of a final product.



CLEAR  
FLGPCL04

WHITE  
FLGPWH04

GREY  
FLGPGR04

BLACK  
FLGPBL04

COLOR  
FLGPCB01

# Material Properties Data

The following material properties are comparable for all Formlabs Standard Resins.

	METRIC <sup>1</sup>		IMPERIAL <sup>1</sup>		METHOD
	Green <sup>2</sup>	Post-Cured <sup>3</sup>	Green <sup>2</sup>	Post-Cured <sup>3</sup>	
<b>Tensile Properties</b>					
Ultimate Tensile Strength	38 MPa	65 MPa	5510 psi	9380 psi	ASTM D 638-10
Tensile Modulus	1.6 GPa	2.8 GPa	234 ksi	402 ksi	ASTM D 638-10
Elongation at Failure	12 %	6.2 %	12 %	6.2 %	ASTM D 638-10
<b>Flexural Properties</b>					
Flexural Modulus	1.25 GPa	2.2 GPa	181 ksi	320 ksi	ASTM C 790-10
<b>Impact Properties</b>					
Notched IZOD	16 J/m	25 J/m	0.3 ft-lbf/in	0.46 ft-lbf/in	ASTM D 256-10
<b>Temperature Properties</b>					
Heat Deflection Temp. @ 264 psi	42.7 °C	58.4 °C	108.9 °F	137.1 °F	ASTM D 648-07
Heat Deflection Temp. @ 66 psi	49.7 °C	73.1 °C	121.5 °F	163.6 °F	ASTM D 648-07

<sup>1</sup> Material properties can vary with part geometry, print orientation, print settings, and temperature.

<sup>2</sup> Data was obtained from green parts, printed using Form 2, 100 µm, Clear settings, washed and air dried without post cure.

<sup>3</sup> Data was obtained from parts printed using Form 2, 100 µm, Clear settings, and post-cured with 1.25 mW/cm<sup>2</sup> of 405 nm LED light for 60 minutes at 60 °C.

## Solvent Compatibility

Percent weight gain over 24 hours for a printed and post-cured 1 x 1 x 1 cm cube immersed in respective solvent:

Solvent	24 Hour Weight Gain (%)	Solvent	24 Hour Weight Gain (%)
Acetic Acid, 5 %	< 1	Hydrogen Peroxide (3 %)	< 1
Acetone	sample cracked	Isooctane	< 1
Isopropyl Alcohol	< 1	Mineral Oil, light	< 1
Bleach, ~5 % NaOCl	< 1	Mineral Oil, heavy	< 1
Butyl Acetate	< 1	Salt Water (3.5 % NaCl)	< 1
Diesel	< 1	Sodium hydroxide (0.025 %, pH = 10)	< 1
Diethyl glycol monomethyl ether	1.7	Water	< 1
Hydraulic Oil	< 1	Xylene	< 1
Skydrol 5	1	Strong Acid (HCl Conc)	distorted

### HIGH RESOLUTION

For demanding applications, our carefully-engineered resins capture the finest features in your model.

### STRENGTH AND PRECISION

Our resins create accurate and robust parts, ideal for our rapid prototyping and product development.

### SURFACE FINISH

Perfectly smooth right out of the printer, parts printed on the Form 2 printer have the polish and finish of a final product.



#### CLEAR

Our Clear Resin polishes to near optical transparency, making it ideal for showcasing internal features.

#### WHITE

Our White Resin emphasizes fine details and has a matte finish with a warm, slightly ivory color.

#### GREY

Our Grey Resin has a smooth, matte finish and shows details beautifully without primer.

#### BLACK

Our Black Resin's opaque matte finish rivals the look of injection-molded plastics, capable of producing incredible looks-like prototypes.



#### COLOR KIT

Color Kit contains a Color Base cartridge and five Color Pigments. Use Color Kit to mix and print matte, opaque parts in a range of colors without the manual work of finishing and painting.