

Black Resin V4.1

An optimally-balanced Black Resin for versatile applications

Black Resin is perfect for general-purpose prototyping and design, and models with intricate details. With a matte surface finish, opaque appearance, and precise details, prints are ready to use right off the printer. Its neutral undertone makes a great base for parts that will eventually be painted or undergo other finishing processes.

Black Resin V4.1 is compatible with Form 3 Series printers. Black Resin V4.1 produces deeper black parts compared to Black Resin V4 (Legacy) and offers improved print reliability.

Form and fit
prototyping

Presentation-ready
models with fine
features and
intricate details

Enclosures
and housings

Jigs and
fixtures



FLGPBK41

Prepared 10/11/2024

Rev. 02 11/14/2024

To the best of our knowledge the information contained herein is accurate. However, Formlabs, Inc. makes no warranty, expressed or implied, regarding the accuracy of these results to be obtained from the use thereof.

Mechanical Properties	METRIC		IMPERIAL		METHOD
	GREEN	POST-CURED 30MIN @ 60C	GREEN	POST-CURED 30MIN @ 60C	
	Ultimate Tensile Strength	31 MPa	48 MPa	4496 psi	
Tensile Modulus	1427 MPa	2081 MPa	207 ksi	302 ksi	ASTM D 638-14
Elongation at Break (X/Y)	24%	12%	24%	12%	ASTM D 638-14

Flexural Properties	METRIC		IMPERIAL		METHOD
	GREEN	POST-CURED 30MIN @ 60C	GREEN	POST-CURED 30MIN @ 60C	
Flexural Strength	47 MPa	89 MPa	6817 psi	12908 psi	ASTM D 790-15
Flexural Modulus	1050 MPa	2260 MPa	152 ksi	328 ksi	ASTM D 790-15

Impact Properties	METRIC		IMPERIAL		METHOD
	GREEN	POST-CURED 30MIN @ 60C	GREEN	POST-CURED 30MIN @ 60C	
Notched Izod	29 J/m	27 J/m	0.551 ft-lbs/in	0.511 ft-lbs/in	ASTM D256-10

Thermal Properties	METRIC		IMPERIAL		METHOD
	GREEN	POST-CURED 30MIN @ 60C	GREEN	POST-CURED 30MIN @ 60C	
Heat Deflection Temp. @ 1.8 MPa	49 °C	55 °C	120 °F	131 °F	ASTM D 648-16
Heat Deflection Temp. @ 0.45 MPa	56 °C	65 °C	133 °F	149 °F	ASTM D 648-16

SOLVENT COMPATIBILITY

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

Solvent	24 hr weight gain (%)	Solvent	24 hr weight gain (%)
Acetic Acid 5%	0.5	Mineral oil, heavy	0.0
Acetone	3.1	Mineral oil, light	0.0
Bleach ~5% NaOCl	0.4	Salt Water (3.5% NaCl)	0.4
Butyl Acetate	-0.1	Skydrol 5	0.2
Diesel Fuel	0.0	Sodium hydroxide solution (0.025% pH = 10)	0.4
Diethyl glycol monomethyl ether	0.5	Strong Acid (HCl Conc)	0.2
Hydraulic Oil	0.5	TPM	0.1
Hydrogen peroxide (3%)	0.0	Water	0.5
Isooctane	0.0	Xylene	0.0
Isopropyl Alcohol	-0.1		

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 3 printer with 100 µm Black Resin V4.1 settings, washed in a Form Wash for 5 minutes in >99% Isopropyl Alcohol, and post-cured at 60°C for 30 minutes in a Form Cure.