

Clear Resin V4.1

An optimally-balanced Clear Resin for transparent applications

Clear Resin is a rigid material that polishes to near optical transparency. It is ideal for working with light or showcasing internal features, printing see-through models and devices. Use Clear Resin to create clear prototype parts, LED housings, windows, fluidics, molds, optics, lighting, and any parts requiring translucency.

Clear Resin V4.1 is compatible with Form 3 Series printers. Clear Resin V4.1 creates more color-neutral and transparent parts compared to Clear Resin V4 (Legacy)

Transparent enclosures,
optical components,
and lighting prototypes

Parts showcasing
internal features

Molds, masters,
and other rapid
tooling

Fluidic devices



FLGPCL41

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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 15MIN @ 60C	GREEN	POST-CURED 15MIN @ 60C	
Ultimate Tensile Strength	37 MPa	53 MPa	5366 psi	7687 psi	ASTM D 638-14
Tensile Modulus	1697 MPa	2369 MPa	246 ksi	344 ksi	ASTM D 638-14
Elongation at Break (X/Y)	19%	9%	19%	9%	ASTM D 638-14
Flexural Properties					
Flexural Properties	METRIC		IMPERIAL		METHOD
	GREEN	POST-CURED 15MIN @ 60C	GREEN	POST-CURED 15MIN @ 60C	
Flexural Strength	62 MPa	103 MPa	8992 psi	14939 psi	ASTM D 790-15
Flexural Modulus	1520 MPa	2710 MPa	220 ksi	393 ksi	ASTM D 790-15
Impact Properties					
Impact Properties	METRIC		IMPERIAL		METHOD
	GREEN	POST-CURED 15MIN @ 60C	GREEN	POST-CURED 15MIN @ 60C	
Notched Izod	29 J/m	27 J/m	0.551 ft-lbs/in	0.511 ft-lbs/in	ASTM D 256-10
Thermal Properties					
Thermal Properties	METRIC		IMPERIAL		METHOD
	GREEN	POST-CURED 15MIN @ 60C	GREEN	POST-CURED 15MIN @ 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

Transmission	POST-CURED 15 MIN @ 60 °C	ASTM STANDARD
Transmission @ 2mm	85 %	ASTM D 1003-21
a* @ 2mm	-4.31	ASTM E 1348-15
b* @ 2mm	5.58	ASTM E 1348-15
Transmission	POST-CURED 15 MIN @ 60 °C	ASTM STANDARD
Transmission @ 10mm	59 %	ASTM D 1003-21
a* @ 10mm	-3.98	ASTM E 1348-15
b* @ 10mm	5.94	ASTM E 1348-15

TRANSMISSION REFERS TO THE AMOUNT OF VISIBLE LIGHT THAT PASSES THROUGH THE PART

a* and b* are more commonly associated with the CIELAB color space, where they denote axes for color measurement:

a* axis: Ranges from green to red, with negative values indicating green and positive values indicating red.

b* axis: Ranges from blue to yellow, with negative values indicating blue and positive values indicating yellow.

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 Clear Resin V41 settings, washed in a Form Wash for 5 minutes in >99% Isopropyl Alcohol, and post-cured at 60°C for 15 minutes in a Form Cure.