



Clear

Photopolymer Resin for Form 1+ and Form 2

FLGPCLO3 MATERIAL PROPERTIES

Prepared: 04/19/2016

Formlabs Clear Resin produces strong plastic parts ideal for a wide variety of applications and is specifically designed to work with your Form 2 or Form 1+ 3D Printer. This material can be easily painted, and when the surface is finished or coated, produces a highly clear part. Upon post-cure, tensile strength and stiffness exceeds that of injection-molded or 3D-printed ABS.

The following material properties are comparable for all our Standard Resins, White, Grey, and Black.

	METRIC ¹		IMPERIAL ¹		METHOD
	Green ²	Postcured ³	Green ²	Postcured ³	
Tensile Properties					
Tensile Strength at yield	38 MPa	65 MPa	5510 psi	9380 psi	ASTM D 638-10
Young's 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
Flexural Properties					
Flexural Modulus	1.25 GPa	2.2 GPa	181 ksi	320 ksi	ASTM C 790-10
Impact Properties					
Notched IZOD	16 J/m	25 J/m	0.3 ft-lbf/in	0.46 ft-lbf/in	ASTM D 256-10
Temperature Properties					
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

NOTES:

¹Material properties can vary with part geometry, print orientation, print settings and temperature.

²Data was obtained from green parts, printed using Form 2, 100 µm, Clear settings, without additional treatments.

³Data refers to post-cured properties obtained after exposing green parts to 1.25 mW/cm² of 405 nm light at 60 °C for 1 hour.

SOLVENT COMPATIBILITY

G = Good resistance.

Parts exposed to this solvent should not experience a decrease in mechanical properties.
($\leq$ 1% weight gain, $\leq$ 1% width increase over 24 hours for a 1 x 1 x 1 cm cube)

A = Acceptable resistance.

Parts exposed to this solvent may experience a small decrease in mechanical properties.
(1 – 2% weight gain, 1 – 2% width increase over 24 hours for a 1 x 1 x 1 cm cube)

X = Unacceptable resistance.

Parts exposed to this solvent will experience a significant decrease in mechanical properties as well as visible degradation. (> 2% weight gain, > 2% width increase over 24 hours for a 1 x 1 x 1 cm cube)

	CLEAR RESIN FLGPCL03	
	GREEN	POST CURED
Acetic Acid, 5%	G	G
Acetone	X	X
Bleach (~5% NaOCl)	G	G
Butyl Acetate	X	G
Diethyl glycol monomethyl ether	X	G
Hydrogen Peroxide (3%)	G	G
Isooctane	G	G
Isopropyl alcohol	X	G
Sodium hydroxide (0.025%, pH = ~10)	G	G
Salt Water (3.5% NaCl)	G	G
Water	G	G
Xylene	X	G