

Durable

Durable Resin for Pliable Prototyping

Durable Resin is the most pliable, impact resistant, and lubricious material in our functional family of Tough and Durable Resins. Choose Durable Resin for squeezable parts and low-friction assemblies.

Squeezable prototypes

Low friction and non-degrading surfaces

Impact resistant jigs

Polyethylene-like strength and stiffness



FLDUCL02



3D-MODEL

formlabs 

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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.

Durable Material Properties Data

	METRIC ¹		IMPERIAL ¹		METHOD
	Green ²	Post-Cured ³	Green ²	Post-Cured ³	
Tensile Properties					
Ultimate Tensile Strength	13 MPa	28 MPa	1900 psi	3980 psi	ASTM D 638-14
Tensile Modulus	0.24 GPa	1.0 GPa	34 ksi	149 ksi	ASTM D 638-14
Elongation at Break	75 %	55 %	75 %	55 %	ASTM D 638-14
Flexural Properties					
Flexural Stress at 5% Strain	1.0 MPa	24 MPa	149 psi	3420 psi	ASTM D 790-17, Procedure A
Flexural Modulus	0.04 GPa	0.66 GPa	5.58 ksi	94.1 ksi	ASTM D 790-17, Procedure A
Impact Properties					
Notched IZOD	127 J/m	114 J/m	2.37 ft-lbf/in	2.13 ft-lbf/in	ASTM D 256-10 (2018), Test Method A
Unnotched IZOD	972 J/m	710 J/m	18.2 ft-lbf/in	13.3 ft-lbf/in	ASTM D4812-11
Temperature Properties					
Heat Deflection Temp. @ 0.45 MPa	< 30 °C	41 °C	< 86 °F	105 °F	ASTM D 648-18, Method B
Thermal Expansion	124 µm/m/°C	106 µm/m/°C	69.1 µin/in/°F	59 µin/in/°F	ASTM E831-14

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 without additional treatments.

³Data was obtained from parts printed using Form 2, 100 µm and post-cured with a Formcure for 120 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:

Mechanical Properties	24 Hour Weight Gain (%)	Mechanical Properties	24 Hour Weight Gain (%)
Acetic Acid, 5 %	1.3	Hydrogen Peroxide (3 %)	1
Acetone	sample cracked	Isooctane	< 1
Isopropyl Alcohol	5.1	Mineral Oil, light	< 1
Bleach, ~5 % NaOCl	< 1	Mineral Oil, heavy	< 1
Butyl Acetate	7.9	Salt Water (3.5 % NaCl)	< 1
Diesel	< 1	Sodium hydroxide (0.025 %, pH = 10)	< 1
Diethyl glycol monomethyl ether	7.8	Water	< 1
Hydraulic Oil	< 1	Xylene	6.5
Skydrol 5	1.3	Strong Acid (HCl Conc)	distorted