

# 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**

\* May not be available in all regions



**Prepared** 10 . 07 . 2020  
**Rev** 01 - 10 . 07 . 2020

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.

# MATERIAL PROPERTIES DATA

# Durable Resin

	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	13 MPa	28 MPa	1900 psi	3980 psi	ASTM D638-14
Tensile Modulus	0.24 GPa	1.0 GPa	34 ksi	149 ksi	ASTM D638-14
Elongation at Break	75%	55%	75%	55%	ASTM D638-14
Flexural Strength	1.0 MPa	24 MPa	149 psi	3420 psi	ASTM D 790-15
<b>Flexural Properties</b>					
Flexural Modulus	0.04 GPa	0.66 GPa	5.58 ksi	94.1 ksi	ASTM D 790-15
<b>Impact Properties</b>					
Notched IZOD	127 J/m	114 J/m	2.37 ft-lbf/in	2.13 ft-lbf/in	ASTM D256-10
Unnotched IZOD	972 J/m	710 J/m	18.2 ft-lbf/in	13.3 ft-lbf/in	ASTM D4812-11
<b>Temperature Properties</b>					
Heat Deflection Temp. @ 1.8 MPa	-	-	-	-	ASTM D 648-16
Heat Deflection Temp. @ 0.45 MPa	< 30 °C	41 °C	< 86 °F	105 °F	ASTM D 648-16
Thermal Expansion (0-150°C)	124 µm/m/°C	106 µm/m/°C	69.1 µin/in/°F	59 µin/in/°F	ASTM E 831-13

<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, Durable settings, without additional treatments.

<sup>3</sup>Data was obtained from parts printed using Form 2, 100 µm, Durable settings and post-cured with a Form Cure 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:

Solvent	24 hr weight gain, %	Solvent	24 hr weight gain, %
Acetic Acid 5%	1.3	Mineral oil (Light)	< 1.0
Acetone	Sample cracked	Mineral oil (Heavy)	< 1.0
Bleach ~5% NaOCl	< 1.0	Salt Water (3.5% NaCl)	< 1.0
Butyl Acetate	7.9	Skydrol 5	1.3
Diesel Fuel	< 1.0	Sodium Hydroxide solution (0.025% PH 10)	< 1.0
Diethyl glycol Monomethyl Ether	7.8	Strong Acid (HCl conc)	Distorted
Hydraulic Oil	< 1.0	Tripropylene glycol monomethyl ether	1.2
Hydrogen peroxide (3%)	1.0	Water	< 1.0
Isooctane (aka gasoline)	< 1.0	Xylene	6.5
Isopropyl Alcohol	5.1		