



# Flexible

Photopolymer Resin for Form 1+

## **MATERIAL PROPERTIES**

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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.

Formlabs Flexible resin has elastomeric properties allowing you to print parts on the Form 1+ 3D printer that are bendable and compressible. Parts are pliable when thin and resilient when thick. Flexible has compression characteristics that make it great for creating parts like custom grips, stamps, gaskets and wearable prototypes. It does not shatter upon failure making it ideal for high impact applications.

	METRIC <sup>1</sup>		IMPERIAL <sup>1</sup>		METHOD
	Green	Postcured <sup>2</sup>	Green	Postcured <sup>2</sup>	
<b>Mechanical Properties<sup>1</sup></b>					
Tensile Strength <sup>3</sup>	2.29 – 2.76 MPa	5.95 – 6.56 MPa	332 – 400 psi	863 – 952 psi	ASTM D412-06 (A)
Elongation at Failure <sup>3</sup>	60%	90%	60%	90%	ASTM D 412-06(A)
Compression Set <sup>4</sup>	—	0.40%	—	0.40%	ASTM D395-03 (B)
Tear Strength <sup>5</sup>	3.50 – 4.73 kN/m	7.36 – 8.41 kN/m	20 – 27 lbf/in	42 – 48 lbf/in	ASTM D624-00
Shore Hardness	80 – 90 A	80 – 90 A	80 – 90 A	80 – 90 A	Durometer Reading
<b>Thermal Properties<sup>1</sup></b>					
5% wt loss <sup>6</sup>	259 °C	266 °C	498 °F	511 °F	ASTM E1131-08

#### NOTES:

<sup>1</sup>Material properties can vary with part geometry, print orientation, print settings and temperature.

<sup>2</sup>Data was obtained from post-cured parts, printed using 50 µm Flexible settings and exposed to 15 J/cm<sup>2</sup> of UV light for 1 hour.

<sup>3</sup>Tensile testing was performed after 3+ hours at 23 °C, using a Die C dumbbell and 20 in/min cross head speed.

<sup>4</sup>Compression testing was performed at 23 °C after aging at 23 °C for 22 hours.

<sup>5</sup>Tear testing was performed after 3+ hours at 23 °C, using a Die C tear specimen and a 20 in/min cross head speed.

<sup>6</sup>Thermal testing was performed from ambient temperature to 900 °C at a ramp rate of 10 °C/minute.