formlabs

Elastic 50A Resin V2

Resin for Soft Flexible Parts

This pliable material is suitable for prototyping transparent parts normally produced with softer rubbers and silicones. Choose Elastic 50A Resin V2 for parts that will bend, stretch, compress, and require transparency.

Compliant features for robotics

Wearables and consumer goods prototyping

Medical models and devices

ORDER A FREE SAMPLE PART →

V2 **FLELCL02**

*** May not be available in all regions**

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MATERIAL PROPERTIES DATA

Elastic 50A Resin V2

	METRIC [1]		IMPERIAL [1]		METHOD
	Green	Post-Cured [2]	Green	Post-Cured [2]	
Mechanical Properties					
Ultimate Tensile Strength [3]	1.7 MPa	3.4 MPa	249 psi	487 psi	ASTM D 412-06 (A)
Stress at 50% Elongation	0.5 MPa	0.9 MPa	74 psi	134 psi	ASTM D 412-06 (A)
Stress at 100% Elongation	0.9 MPa	1.7 MPa	133 psi	246 psi	ASTM D 412-06 (A)
Elongation at Break	160%	160%	160%	160%	ASTM D 412-06 (A)
Shore Hardness	44	55	44	55	ASTM 2240
Compression Set (23 °C for 22 hours)	Not Tested	2.1%	Not Tested	2.1%	ASTM D 395-03 (B)
Compression Set (70 °C for 22 hours)	Not Tested	3.1%	Not Tested	3.1%	ASTM D 395-03 (B)
Tear Strength [4]	8.2 kN/m	12.3 kN/m	46.8 lb/in	70.2 lb/in	ASTM D 624-00
Ross Flex Fatigue at 23 °C	Not Tested	800	Not Tested	800	ASTM D1052, (notched), 60° bending, 100 cycles/minute
Bayshore Resilience	Not Tested	18%	Not Tested	18%	ASTM D2632
Thermal Properties					
Glass transition temperature (Tg)	Not Tested	-34.5 °C	Not Tested	-30.1 °F	DMA

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

[2] Data was obtained from parts printed using Form 3, 100 µm, Elastic 50A Resin V2 settings, Elastic 50A Resin V2 post-processing steps.

[3] Tensile testing was performed after 3+ hours at 23 °C, using a Die C specimen cut from sheets.

[4] Tear testing was performed after 3+ hours at 23 °C, using a Die C tear specimen directly printed.

General Properties	
Density	1.01
Color	Clear
Viscosity (35 °C)	1400 cPs

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%	1.5	Isooctane (aka gasoline)	15.6
Acetone	43.4	Mineral oil (light)	0.7
Isopropyl Alcohol	39.2	Mineral oil (Heavy)	0.4
Bleach ~5% NaOCl	0.6	Salt Water (3.5% NaCl)	0.6
Butyl Acetate	133.1	Sodium Hydroxide solution (0.025% PH 10)	0.7
Diesel Fuel	7.9	Water	0.7
Diethyl Glycol Monomethyl Ether	31.4	Xylene	163.9
Hydraulic Oil	3.9	Strong Acid (HCl conc)	45.6
Skydrol 5	41.2	Tripropylene Glycol Methyl Ether (TPM)	43.6
Hydrogen peroxide (3%)	0.9		