

Precision Model Resin

Formlabs' most accurate material for printing high quality restorative models

Precision Model Resin is a high-accuracy material for creating restorative models with >99% of printed surface area within 100 μm of the digital model. Create beautiful models with crisp margin lines thanks to high opacity, beige color, and a smooth, matte finish to capture fine details.

Precision Model Resin is a new material that leverages the Form 4 ecosystem to print three times as fast as previous formulations of Model Resin.

Restorative models

Implant models

Crown fit test models

Removable die models



FLPMBE01

* May not be available in all regions

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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.

MATERIAL PROPERTIES DATA

Precision Model Resin

	METRIC ¹		IMPERIAL ¹		METHOD
	Green ²	Post-Cured ³	Green ²	Post-Cured ³	
Tensile Properties					
Ultimate Tensile Strength	44 MPa	50 MPa	6390 psi	7190 psi	ASTM D638-14
Tensile Modulus	2.0 GPa	2.2 GPa	293 ksi	326 ksi	ASTM D638-14
Elongation at Break	11%	8.60%	11 %	8.60%	ASTM D638-14
Flexural Properties					
Flexural Strength	68 MPa	87 MPa	9863 psi	12618 psi	ASTM D790-15
Flexural Modulus	1.7 GPa	2.3 GPa	247 ksi	334 ksi	ASTM D790-15
Impact Properties					
Notched Izod	28 J/m	32 J/m	0.52 ft-lbs/in	0.59 ft-lbs/in	ASTM D256-10
Unnotched Izod	440 J/m	262 J/m	8.3 ft-lbs/in	4.9 ft-lbs/in	ASTM D4812-11
Thermal Properties					
Heat Deflection Temp. @ 1.8 MPa	45.1 °C	46.3 °C	113.2 °F	115.3 °F	ASTM D648-16
Heat Deflection Temp. @ 0.45 MPa	51.7 °C	53.5 °C	125.1 °F	128.3 °F	ASTM D648-16
Thermal Expansion	80.2 µm/m/°C	81.1 µm/m/°C	44.6 µin/in/°F	45.1 µin/in/°F	ASTM E813-13

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%	1.0	Mineral oil (Heavy)	0.2
Acetone	10.3	Mineral oil (Light)	0.3
Bleach ~5% NaOCl	0.8	Salt Water (3.5% NaCl)	0.9
Butyl Acetate	0.6	Skydrol 5	0.3
Diesel Fuel	0.2	Sodium Hydroxide solution (0.025% PH 10)	0.9
Diethyl glycol Monomethyl Ether	2.1	Strong Acid (HCl conc)	0.5
Hydraulic Oil	0.2	Tripropylene glycol monomethyl ether	0.3
Hydrogen peroxide (3%)	1.01	Water	0.9
Isooctane (aka gasoline)	-0.03	Xylene	< 0.1
Isopropyl Alcohol	0.6		

¹ Material properties may vary based on part geometry, print orientation, print settings, temperature, and disinfection or sterilization methods used.

² Data was obtained from green parts printed on a Form 4 printer with 50 µm Precision Model Resin settings, washed in a Form Wash for 5 minutes in ≥99% Isopropyl Alcohol, and air dried without post cure.

³ Data for post-cured samples were measured on Type I tensile bars printed on a Form 4 printer with 50 µm Precision Model settings, washed in a Form Wash for 5 minutes in ≥99% Isopropyl Alcohol, and post-cured at 35°C for 5 minutes in a Form Cure.