**MATERIAL DATA SHEET** 

# **Dental Model**

# Dental Model for High-Precision, High-Accuracy

Designed for crown and bridge models with removable dies, Dental Model Resin is a high-precision, high-accuracy resin. Print crisp margins and contacts within +/- 35 microns, and removable dies with consistently tight fit. A smooth, matte surface finish and color similar to gypsum make it easy to switch from analog to digital model production.

FLDMBE02



## Material Properties Data

	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>		
Mechanical Properties						
Tensile Strength at Yield	33 MPa	61 MPa	4800 psi	8820 psi	ASTM D 638-14	
Tensile Modulus	1.6 GPa	2.7 GPa	230 ksi	397 ksi	ASTM D 638-14	
Elongation at Failure	25 %	5 %	25 %	5 %	ASTM D 638-14	
Flexural Properties						
Flexural Modulus	0.95 GPa	2.5 GPa	138 ksi	365 ksi	ASTM D 790-15	
Flexural Strength at 5% Strain	33.9 MPa	95.8 MPa	4910 psi	13900 psi	ASTM D 790-15	
Impact Properties						
Notched IZOD	27 J/m	33 J/m	0.5 ft-lbf/in	0.6 ft-lbf/in	ASTM D256-10	
Thermal Properties						
Heat Deflection Temp. @ 264 psi	32.8 °C	45.9 °C	91.1 °F	114.6 °F	ASTM D 648-16	
Heat Deflection Temp. @ 66 psi	40.4 °C	48.5 °C	104.7 °F	119.3 °F	ASTM D 648-16	

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

# Solvent Compatibility

#### G = Good resistance.

Parts exposed to this solvent should not experience a decrease in mechanical properties. ( $\leq$  1% weight gain,  $\leq$  1% width increase over 24 hours for a 1 x 1 x 1 cm cube)

#### A = Acceptable resistance.

Parts exposed to this solvent may experience a small decrease in mechanical properties. (1-2% weight gain, 1-2% width increase over 24 hours for a  $1\times1\times1$  cm cube)

#### X = Unacceptable resistance.

Parts exposed to this solvent will experience a significant decrease in mechanical properties as well as visible degradation. (> 2% weight gain, > 2% width increase over 24 hours for a  $1 \times 1 \times 1$  cm cube)

Solvent	Green	Post-Cured	Solvent	Green	Post-Cured
Acetic Acid, 5 %	G	G	Isooctane	G	G
Acetone	X	X	Isopropyl Alcohol	Χ	G
Bleach, ~5 % NaOCl	G	G	Sodium hydroxide (0.025 %, pH = 10)	G	G
Butyl Acetate	X	G	Salt Water (3.5 % NaCl)	G	G
Diethyl glycol monomethyl ether	X	G	Water	G	G
Hydrogen Peroxide (3 %)	G	G	Xylene	X	G

### BILCOTECH

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 $<sup>^2</sup>$  Data was obtained from green parts, printed using Form 2, 100  $\mu$ m, Dental Model settings, without additional treatments.

<sup>&</sup>lt;sup>3</sup> Data was obtained from parts printed using Form 2, 100 μm, Dental Model settings and postcured with 1.25 mW/cm<sup>2</sup> of 405 nm LED light for 60 minutes.