

High Temp

High Temp Resin for Heat Resistance

High Temp Resin has a heat deflection temperature (HDT) of 289 °C @ 0.45 MPa—the highest on the 3D printing materials market. Use it to print models for environmental testing, or create molds and masters for production processes like casting and thermoforming.

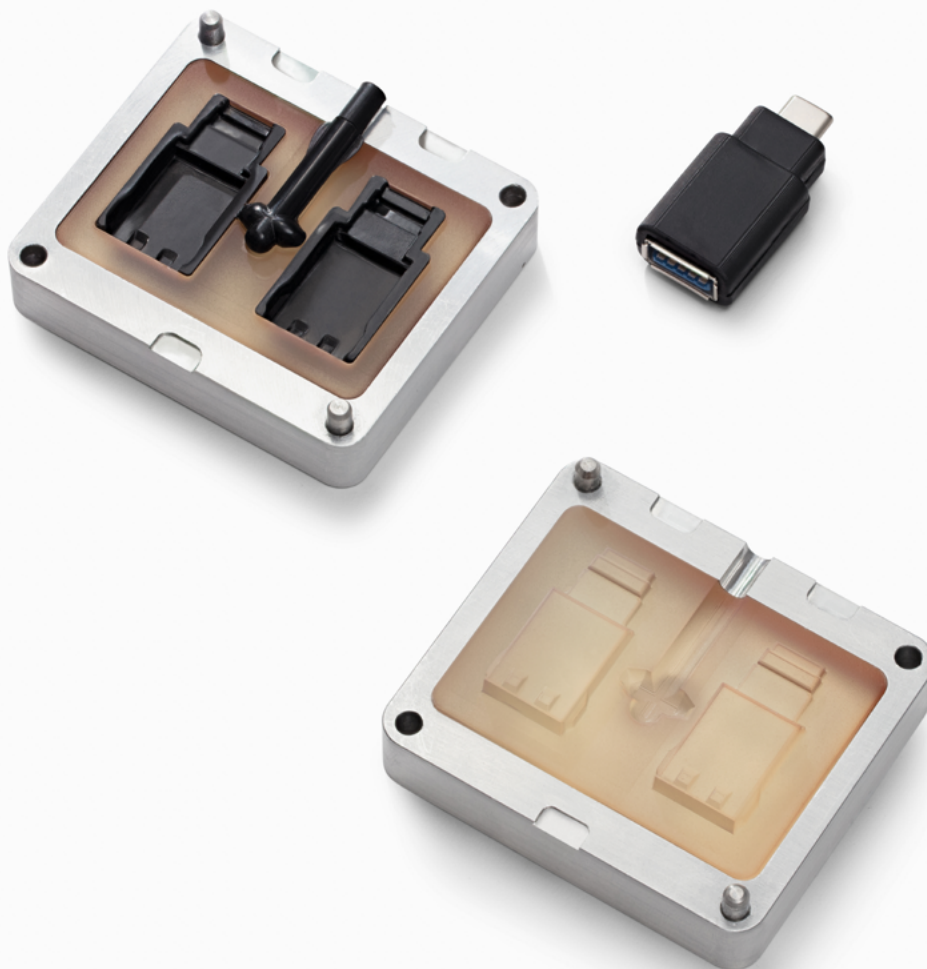
Heat resistant fixtures

Hot air and fluid flow

Environmental testing

Housing components

Mold prototyping



FLHTAM01

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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

	METRIC ¹		IMPERIAL ¹		METHOD
	Green ²	Post-Cured ³	Green ²	Post-Cured ³	
Mechanical Properties					
Ultimate Tensile Strength	33 MPa	51.1 MPa	4790 psi	7410 psi	ASTM D 638-14
Tensile Modulus	1.5 GPa	3.6 GPa	222 ksi	525 ksi	ASTM D 638-14
Elongation at Break	9 %	2 %	9 %	2 %	ASTM D 638-14
Flexural Strength at Break	41.2 MPa	106.9 MPa	5980 psi	15500 psi	ASTM D 790-15
Flexural Modulus	1.1 GPa	3.3 GPa	158 ksi	478 ksi	ASTM D 790-15
Notched IZOD	12.3 J/m	14 J/m	0.23 ft-lbf/in	0.26 ft-lbf/in	ASTM D 256-10
Water Absorption	N/A	0.21 %	N/A	0.21 %	ASTM D 570-98
Thermal Properties					
Heat Deflection Temp. @ 1.8 MPa	42.3 °C	130 °C	108.1 °F	266 °F	ASTM D 648-16
Heat Deflection Temp. @ 0.45 MPa	55.9 °C	289 °C	132.6 °F	552.2 °F	ASTM D 648-16
Thermal Expansion (0 – 150 °C)	120.9 µm/m/°C	87.5 µm/m/°C	67.2 µin/in/°F	48.6 µin/in/°F	ASTM E 831-13

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

²Data was obtained from green parts, printed using Form 2, 100 µm, High Temp settings, without additional treatments.

³Data was obtained from parts printed using Form 2, 100 µm, High Temp settings and post-cured with 80.5 mW/cm² of 365 nm fluorescent light for 60 minutes.

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	Mineral Oil, light	< 1
Acetone	< 1	Mineral Oil, heavy	< 1
Bleach, ~5 % NaOCl	< 1	Salt Water (3.5 % NaCl)	< 1
Butyl Acetate	< 1	Sodium hydroxide (0.025 %, pH = 10)	< 1
Diesel	< 1		
Diethyl glycol monomethyl ether	< 1		
Hydraulic Oil	< 1		
Hydrogen Peroxide (3 %)	< 1		
Isooctane	< 1		