PrintParts

Custom Parts. On Demand.

High Temp Resin - Technical Data Sheet

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Material Properties Data Metric

	METRIC[1]			METHOD
	Green[2]	Post-Cured[3]	Post-Cured + Thermally Post-Cured[4]	
Thermal Properties				
Heat Deflection Temp. @ 1.8 MPa	43.6 °C	99.2 °C	101 °C	ASTM D 648-16
Heat Deflection Temp. @ 0.45 MPa	49.3 °C	142 °C	238 °C	ASTM D 648-16

	METRIC[1]			METHOD
	Green[2]	Post-Cured[5]	Post-Cured + Thermally Post-Cured[6]	
Mechanical Properties				
Ultimate Tensile Strength	20.9 MPa	58.3 MPa	51.1 MPa	ASTM D 638-14
Elongation at break	14 %	3.3 %	2.4 %	ASTM D 638-14
Tensile modulus	0.75 GPa	2.75 GPa	2.9 GPa	ASTM D 638-14
Flexural strength at break	24.1 MPa	94.5 MPa	93.8 MPa	ASTM D 790-15
Flexural modulus	0.69 GPa	2.62 GPa	2.62 GPa	ASTM D 790-15
Impact Properties				
Notched IZOD	32.8 J/m	18.2 J/m	24.2 J/m	ASTM D 256-10
Thermal Properties				
Thermal Expansion (0-150 °C)	118.1 (µm/m/°C)	79.6 (µm/m/°C)	74 (µm/m/°C)	ASTM E 831-13

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

[2] Data was obtained from green parts, printed using Form 2, 100 µm, High Temp settings, washed for 5 minutes in Form Wash and air dried without post cure.

[3] Data was obtained from parts printed using a Form 2, 100 micron, High Temp settings, and post-cured with Form Cure at 80 °C for 120 minutes.

[4] Data was obtained from parts printed using a Form 2, 100 micron, High Temp settings, and post-cured with Form Cure at 80 °C for 120 minutes plus an additional thermal cure in a lab oven at 160 °C for 180 minutes.

[5] Data was obtained from parts printed using a Form 2, 100 micron, High Temp settings, and post-cured with Form Cure at 60 °C for 60 minutes.

[6] Data was obtained from parts printed using a Form 2, 100 micron, High Temp settings, and post-cured with Form Cure at 60 °C for 60 minutes plus an additional thermal cure in a lab oven at 160 °C for 90 minutes

Material Properties Data Imperial

	IMPERIAL[1]			METHOD
	Green[2]	Post-Cured[3]	Post-Cured + Thermally Post-Cured[4]	
Thermal Properties				
Heat Deflection Temp. @ 1.8 MPa	110.48 °F	210.56 °F	213.8 °F	ASTM D 648-16
Heat Deflection Temp. @ 0.45 MPa	120.74 °F	287.6 °F	460.4 °F	ASTM D 648-16

	IMPERIAL[1]			METHOD
	Green[2]	Post-Cured[5]	Post-Cured + Thermally Post-Cured[6]	
Mechanical Properties				
Ultimate Tensile Strength	3031 psi	8456 psi	7411 psi	ASTM D 638-14
Elongation at break	14 %	3.3 %	2.4 %	ASTM D 638-14
Tensile modulus	109 ksi	399 ksi	421 ksi	ASTM D 638-14
Flexural strength at break	3495 psi	13706 psi	13605 psi	ASTM D 790-15
Flexural modulus	100 ksi	400 ksi	400 ksi	ASTM D 790-15
Impact Properties				
Notched IZOD	0.61 ft-lbf/in	0.34 ft-lbf/in	0.45 ft-lbf/in	ASTM D 256-10
Thermal Properties				
Thermal Expansion (0-150 °C)	65.6 µin/in/°F	44.2 µin/in/°F	41.1 µin/in/°F	41.1 uin/in/°F

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

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[3] Data was obtained from parts printed using a Form 2, 100 micron, High Temp settings, and post-cured with Form Cure at 80 °C for 120 minutes.

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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 (%)	24 hr size gain (%)	Solvent	24 hr weight gain (%)	24 hr size gain (%)
Acetic Acid, 5 %	< 1	< 1	Hydrogen peroxide (3%)	< 1	< 1
Acetone	< 1	< 1	Isooctane (aka gasoline)	< 1	< 1
Isopropyl Alcohol	< 1	< 1	Mineral oil (light)	< 1	< 1
Bleach ~5% NaOCl	< 1	< 1	Mineral oil (Heavy)	< 1	< 1
Butyl Acetate	< 1	< 1	Salt Water (3.5% NaCl)	< 1	< 1
Diesel Fuel	< 1	< 1	Sodium Hydroxide solution	< 1	< 1
Diethyl glycol Monomethyl Ether	< 1	< 1	Water	< 1	< 1
Hydraulic Oil	< 1	< 1	Xylene	< 1	< 1
Skydrol 5	< 1	< 1	Strong Acid (HCl conc)	1.2	< 1