

MATERIAL PROPERTIES DATA

ESD Resin

	METRIC ^{1,2}	IMPERIAL ^{1,2}	METHOD
	Post-Cured	Post-Cured	
Mechanical Properties			
Ultimate Tensile Strength	44.2 MPa	6410 psi	ASTM D 638-14
Tensile Modulus	1.937 GPa	280.9 ksi	ASTM D 638-14
Elongation at Break	12%	12%	ASTM D 638-14
Flexural Properties			
Flexural Strength	61 MPa	8860 psi	ASTM D 790-17
Flexural Modulus	1.841 GPa	267 ksi	ASTM D 790-17
Impact Properties			
Notched Izod	26 J/m	0.489 ft-lbs/in	ASTM D 256-10
Unnotched Izod	277 J/m	5.19 ft-lbs/in	ASTM D 4812-11
Thermal Properties			
Heat Deflection Temp. @ 1.8 MPa	54.2 °C	129.6 °F	ASTM D 648-18
Heat Deflection Temp. @ 0.45 MPa	62.2 °C	143.9 °F	ASTM D 648-18
Thermal Expansion	123.7µm/m/°C	68.7µin/in/°F	ASTM E 813-13
Electrical Properties			
Surface Resistivity	10 ⁵ - 10 ⁸ Ω/sq		ANSI/ESD 11.11 ³
Volume Resistivity	10 ⁵ - 10 ⁷ Ω-cm		ANSI/ESD 11.11 ³
Physical Properties			
Density	1.116 g/cm ³	69.67 lbs/ft ³	ASTM D792
Hardness		90 Shore D	ASTM D2240

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

² Data for post-cured samples were measured on Type IV tensile bars printed on a Form 3 printer with 100 µm ESD Resin settings, washed in a Form Wash for 20 minutes in ≥99% Isopropyl Alcohol, and post-cured at 70°C for X 60 minutes in a Form Cure.

³ ESD Resin was tested at NAMSA World Headquarters, OH, USA.

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%	0.5	Mineral oil, heavy	0.1
Acetone	13.1	Mineral oil, light	0.1
Bleach ~5% NaOCl	0.5	Salt Water (3.5% NaCl)	0.6
Butyl Acetate	3.8	Skydrol 5	0.5
Diesel Fuel	0.2	Sodium hydroxide solution (0.025% pH = 10)	0.7
Diethyl glycol monomethyl ether	3.6	Strong Acid (HCl Conc)	1.4
Hydraulic Oil	0.2	TPM	0.6
Hydrogen peroxide (3%)	0.6	Water	0.7
Isooctane	< 0.1	Xylene	1.60
Isopropyl Alcohol	2.6		