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# TOUGH Resin

TOUGH is a rigid, robust engineering material with a good combination of strength and elongation. TOUGH can be used to produce functional end-use parts.



		Cured Parts	Standard
<b>Tensile Properties</b>	TENSILE STRENGTH	82.9 MPa	ASTM D638
	ELASTIC MODULUS	2566 MPa	ASTM D638
	ELONGATION AT BREAK	14%	ASTM D638
<b>Flexural Properties</b>	FLEXURAL STRENGTH	122.4 MPa	ASTM D790
	FLEXURAL MODULUS	4 GPa	ASTM D790
<b>Thermal Properties</b>	HDT @ 0.45 MPa	78 °C	ASTM D648 - 07
	CTE @ 60C	118 $\mu\text{m}/\text{m}/^\circ\text{C}$	-
<b>General Properties</b>	CONTACT ANGLE	30-50°	ASTM D7334
	WATER ABSORPTION (24h)	1.28%	ASTM D570
	DIELECTRIC CONSTANT (10 GHz)	2.88	-
	DF	0.033	-
	HARDNESS	74.5 Shore D	ASTM D785
	VISCOSITY	180 cP	-
	STANDARD COLOR	Yellow Translucent / Carbon Black*	-
COMPATIBLE BMF SYSTEMS	S130, S140, S230, S240, S350	-	

<sup>1</sup> Final properties are dependent on print conditions, post-processing operations, and part geometry.

<sup>2</sup> Test samples were UV cured and heat cured.

\* Carbon black materials are not available on 2 $\mu\text{m}$  systems