

## TYPICAL PROPERTIES

# VESPEL® TP- 8054



### THERMOPLASTIC PARTS FOR HIGH-TEMPERATURE APPLICATIONS

Vespel® TP-8054 is an unfilled thermoplastic polyimide for use in high-temperature environments. This unfilled general-purpose grade offers a unique balance of mechanical and thermal properties for superior performance in aggressive environments.

As part of the Vespel® parts and shapes product line, injection-molded Vespel® TP-8054 parts comply with the highest quality standards required in the industry.

MECHANICAL		TEST METHOD	SI UNITS	ENGLISH UNITS
TENSILE STRENGTH	23°C/73°F 150°C/302°F	ASTM D-638	92 MPa 58 MPa	13,400 psi 8,400 psi
TENSILE ELONGATION	23°C/73°F 150°C/302°F	ASTM D-638	90% 90%	90% 90%
FLEXURAL STRENGTH	23°C/73°F 150°C/302°F	ASTM D-790	137 MPa 88 MPa	19,900 psi 12,800 psi
FLEXURAL MODULUS	23°C/73°F 150°C/302°F	ASTM D-790	2.9 GPa 2.5 GPa	427,000 psi 370,000 psi
COMPRESSIVE STRENGTH	23°C/73°F 150°C/302°F	JIS K-7208	120 MPa 76 MPa	17,400 psi 11,100 psi
NOTCHED IZOD 3.175 mm/1/8 in.	23°C/73°F	ASTM D-256	94 J/m	1.7 ft. lb./in.
HARDNESS, ROCKWELL E		ASTM D-785	47	47

THERMAL	TEST METHOD	SI UNITS	ENGLISH UNITS
HDT @ 1.8MPa (264 psi)	ASTM D-648	238°C	460°F
CTE (23-150°C/73-302°F) FLOW DIRECTION	ASTM E-228	4.9x10 <sup>-5</sup> cm/cm/°C	2.7x10 <sup>-5</sup> in./in./°F
CTE (23-150°C/73-302°F) TRANSVERSE DIRECTION	ASTM E-228	5.2x10 <sup>-5</sup> cm/cm/°C	2.9x10 <sup>-5</sup> in./in./°F
THERMAL CONDUCTIVITY	ASTM C-177	0.17 W/m K	2.32 BTU in./hr. ft. <sup>2</sup> °F
SPECIFIC HEAT @ 23 °C/73 °F	DSC	0.24 Cal/g °C	0.24 BTU/lb. °F
SPECIFIC HEAT @ 100 °C/212 °F	DSC	0.24 Cal/g °C	0.24 BTU/lb. °F
SPECIFIC HEAT @ 300 °C/572 °F	DSC	0.34 Cal/g °C	0.34 BTU/lb. °F

ELECTRICAL	TEST METHOD	SI UNITS	ENGLISH UNITS
DIELECTRIC CONSTANT @ 1 KHz	ASTM D-150	3.2	3.2
DIELECTRIC CONSTANT @ 1 MHz	ASTM D-150	3.1	3.1
DISSIPATION FACTOR @ 1 KHz	ASTM D-150	0.0009	0.0009
DISSIPATION FACTOR @ 1 MHz	ASTM D-150	0.0034	0.0034
SURFACE RESISTIVITY	ASTM D-257	E17-E18 Ohms	E17-E18 Ohms
VOLUME RESISTIVITY	ASTM D-257	E17-E18 Ohm-cm	E17-E18 Ohm-cm

OTHER PROPERTIES	TEST METHOD	SI UNITS	ENGLISH UNITS
SPECIFIC GRAVITY	ASTM D-792	1.33	1.33
WATER ABSORPTION (24 hrs. @ 23°C/73°F)	ASTM D-570	0.34%	0.34%



The miracles of science™

## For more information about DuPont™ Vespel®:

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Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement."