

# DuPont™ Vespel® SMP-40025

POLYIMIDE DIRECT-FORMED PARTS

## Typical Direct-Formed Properties

DuPont™ Vespel® SMP-40025 parts and shapes offer thermal oxidation resistance and thermal stability with high modulus and low elongation.

*Some data presented below are based on limited production runs and are subject to revision as new knowledge and experience become available.*

Mechanical Property	Temperature	Test Method	Units	Typical Values
Tensile Strength	23 °C (73 °F) 260 °C (500 °F)	ASTM D-638	MPa (kpsi)	71 (10.3) 40 (5.8)
Elongation at Break	23 °C (73 °F) 260 °C (500 °F)	ASTM D-638	%	1.4 3.1
Young's Modulus	23 °C (73 °F) 260 °C (500 °F)	ASTM D-638	MPa (kpsi)	6,300 (916) 3,100 (447)
Flexural Modulus	23 °C (73 °F) 260 °C (500 °F)	ASTM D-790	MPa (kpsi)	4,900 (710) 2,500 (358)
Flexural Strength	23 °C (73 °F) 260 °C (500 °F)	ASTM D-790	MPa (kpsi)	80 (11.6) 53 (7.7)
Surface Hardness		ASTM D-785 Rockwell E	—	59
Poisson's Ratio	23 °C (73 °F) 190 °C (374 °F)	ASTM D-638	—	0.3
Thermal Property				
Coefficient of Lineal Thermal Expansion	23 °C to 300 °C (73 °F to 572 °F)	ASTM E-831	m <sup>-6</sup> /m°C in <sup>-6</sup> /in°F	63 (35)
				34 (19)
Thermal Oxidative Stability 100 hr at 70 psia, circulating air	371 °C (700 °F)	—	%	1.75



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DuPont™ Vespel® SMP-40025 Typical Direct-Formed Properties (continued)

Wear and Friction	Temperature	Test Method	Units	Typical Values
PV Limit	—	—		
Coefficient of Friction P = 187 psi V = 134 f/m	—	—	—	0.21 (0.21)
Falex Wear 25 KPV 0.875 MPa m/s	—	—	—	0.29 (19.7)
Other Properties				
Specific Gravity	—	ASTM D-792	—	1.39
Water Absorption at 100%, 24 hr (wt change)	—	ASTM D-570	%	0.45

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Contact DuPont at the following regional locations:

**North America**  
800-222-8377

**Latin America**  
+0800 17 17 15

**Europe, Middle East, Africa**  
+41 22 717 51 11

**Greater China**  
+86-400-8851-888

**ASEAN**  
+65-6586-3688

**Japan**  
+81-3-5521-8484

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