

# DuPont™ Vespel® SCP-5050

## POLYIMIDE ISOSTATIC SHAPES

### TYPICAL ISO PROPERTIES

DuPont™ Vespel® SCP-5050 is a new and innovative polyimide composition that improves high temperature and wear resistance compared to conventional polyimides allowing replacement of metal and graphite in more applications. Use of Vespel® SCP-5050 enables more efficient and durable systems, increased performance and reduced maintenance costs. The proprietary composition is designed to offer Coefficient of Thermal Expansion (CTE) similar to steel.

*The typical values presented below are preliminary results and are subject to revision.*

Mechanical Property	Temperature	ASTM Method	SI (English) Units	Typical Values
Tensile Strength	23°C (73°F) 260°C (500°F)	D-638 D-1708 Specimen	MPa (kpsi)	72 (10.5) 38 (5.6)
Tensile Elongation	23°C (73°F) 260°C (500°F)	D-638 D-1708 Specimen	%	2.5 5.3
Young's Modulus	23°C (73°F) 260°C (500°F)	D-638 D-1708 Specimen	MPa (kpsi)	8,928 (1,295) 2,931 (425)
Flexural Strength	23°C (73°F) 260°C (500°F)	D-790	MPa (kpsi)	130 (19) 73 (11)
Flexural Modulus	23°C (73°F) 260°C (500°F)	D-790	MPa (kpsi)	7,800 (1,130) 5,080 (740)
Compressive Strength	23°C (73°F) 260°C (500°F)	D-695	MPa (kpsi)	219 (32) 240 (35)
Compressive Modulus	23°C (73°F) 260°C (500°F)	D-695	MPa (kpsi)	2,997 (435) 3,138 (455)
Compressive Stress at 10% Strain	23°C (73°F) 260°C (500°F)	D-695	MPa (kpsi)	172 (25.0) 184 (26.7)
Rockwell "E" Hardness	—	D-785	—	63
Deformation Under Load @ 2Kpsi (14MPa), after 24 hours	23°C (73°F)	D-621	% deformation	0.03
Thermal Property	Temperature	ASTM Method	SI (English) Units	Typical Values
Coefficient of Thermal Expansion	23 – 300°C (73 – 572°F)	E-831	m/m·°C or m/m·K (in/in·°F)	29 x 10 <sup>-6</sup> (16 x 10 <sup>-6</sup> )
Specific Heat	60°C (140°F)	E-1269	J/kg·°C (Btu/lb·°F)	920 (0.22)
Other Property	Temperature	ASTM Method	SI (English) Units	Typical Values
Specific Gravity	—	D-792	—	1.76
Water Absorption after 24 hours	23°C (73°F)	D-570	% weight change	0.04



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Phone: 800-222-VESP (8377)  
Fax: 302-999-2311  
E-mail: [web-inquiries.DDF@usa.dupont.com](mailto:web-inquiries.DDF@usa.dupont.com)

Web: [vespel.dupont.com](http://vespel.dupont.com)

*The data listed here fall within the normal range of properties, but they should not be used to establish specification limits nor used alone as the basis of design. The DuPont Company assumes no obligations or liability for any advice furnished or for any results obtained with respect to this information. All such advice is given and accepted at the buyer's risk. The disclosure of information herein is not a license to operate under, or a recommendation to infringe, any patent of DuPont or others. Since DuPont cannot anticipate all variations in actual end-use conditions, DuPont makes no warranties and assumes no liability in connection with any use of this information.*

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