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 Coeffecient 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)	29×10^{-6} (16×10^{-6})
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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