

DuPont™ Vespel® SCP-5009

Polyimide Isostatic Shapes

Typical SCP-5009 ISO Properties- Rev. May 2011

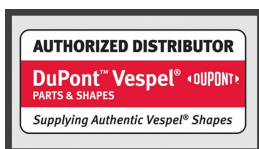
DuPont™ Vespel® SCP-5009 provides material solutions for high wear and friction applications under high operating pressure and elevated temperature environments. Vespel® SCP-5009 shapes have a low coefficient of thermal expansion and provide good sealing as well as outstanding mechanical properties like high compressive strength and low creep, even at these extreme conditions.

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	ASTM Method	SI (English) Units	Typical Values
Tensile Strength	23 °C (73 °F) 260 °C (500 °F)	D638 /D1708 Specimen	MPa (kpsi)	116 (16.9) 57 (8.4)
Tensile Modulus	23 °C (73 °F) 260 °C (500 °F)	D638 /D1708 Specimen	MPa (kpsi)	6,003 (871) 2,612 (379)
Tensile Elongation	23 °C (73 °F) 260 °C (500 °F)	D638 /D1708 Specimen	%	3.0 9.7
Flexural Strength	23 °C (73 °F) 260 °C (500 °F)	D790	MPa (kpsi)	195 (28.3) 99 (14.4)
Flexural Modulus	23 °C (73 °F) 260 °C (500 °F)	D790	MPa (kpsi)	6,231 (903) 3,560 (516)
Compressive Strength	23 °C (73 °F) 260 °C (500 °F)	D695	MPa (kpsi)	481 (70) 414 (60)
Compressive Strain, Ultimate	23 °C (73 °F) 260 °C (500 °F)	D695	%	51 66
Compressive Modulus	23 °C (73 °F) 260 °C (500 °F)	D695	MPa (kpsi)	2,594 (376) 1,663 (241)
Compressive Stress at 1% Strain at 10% Strain at 0.1% Offset	23 °C (73 °F)	D695	MPa (kpsi)	31 (4.5) 222 (32.2) 196 (28.5)
Compressive Stress at 1% Strain at 10% Strain at 0.1% Offset	260 °C (500 °F)	D695	MPa (kpsi)	19 (2.8) 96 (13.9) 45 (6.5)



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DuPont™ Vespel® SCP-5009 ISO Typical Properties (continued)

Thermal Properties	Temperature	Pressure	ASTM Method	SI (English) Units	Typical Values
Coefficient of Linear Thermal Expansion	23–300 °C (73–572 °F)	—	E831	10 ⁻⁶ m/m·°C (10 ⁻⁶ in/in·°F)	44 (24)
Wear Property	Velocity	Pressure	Method	SI (English) Units	Typical Values
Coefficient of Friction, Unlubricated, Air 25K PV 100K PV	0.7 m/s (134 fpm) 2.0 m/s (400 fpm)	1.3 MPa (187 kpsi) 1.7 MPa (250 kpsi)	Falex	—	0.22 0.14
Other Properties	Temperature	Pressure	ASTM Method	SI (English) Units	Typical Values
Water Absorption	23 °C (73 °F)	—	D570	% weight change % width change % length change	0.09 0.14 0.14
Specific Gravity	23 °C (73 °F)	—	D792	—	1.5
Rockwell “E” Hardness	23 °C (73 °F)	—	D785	—	91
Deformation under Load 10 minutes 24 hours	—	14 MPa (2 kpsi)	D621	%	0.01 0.03

Contact DuPont at the following regional locations:

North America

800-222-8377

Greater China

+86-400-8851-888

Latin America

+0800 17 17 15

ASEAN

+65-6586-3688

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