

DuPont™ Vespel® ST-2010

POLYIMIDE DIRECT-FORMED PARTS

Typical Direct-Formed Properties

DuPont™ Vespel® ST-2010 parts and shapes can be used for lubricated or non-lubricated, low friction and wear applications including valve seats, seals, bearings, washers and seal rings. ST-2010 is a filled polymer with good toughness, strength and high elongation properties.

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	Units	Typical Values
Tensile Strength	23 °C (73 °F) 260 °C (500 °F)	D638	MPa (kpsi)	68 (9.28) 32 (4.64)
Strain at Break	23 °C (73 °F) 260 °C (500 °F)	D638	%	10.0 9.8
Tensile Modulus	23 °C (73 °F)	D638	MPa (kpsi)	2758 (400)
Izod Notched Impact Strength	23 °C (73 °F)	D256	J/m	53
Compressive Strength at 1% strain at 10% strain Ultimate	23 °C (73 °F)	D695	MPa (kpsi)	15 (2.17) 82 (11.89) 269 (39)
Compressive Modulus	23 °C (73 °F)	D695	MPa (kpsi)	1827 (265)
Electrical				
Dielctric Strength	23 °C (73°F)	D149	kV/mm	10.4
Dielectric Constant 100 Hz 10 kHz 1 MHz	23 °C (73°F)	D150	—	4.80 4.78 4.70
Dielectric Factor 100 Hz 10 kHz 1 MHz	23 °C (73°F)	D150	—	0.0014 0.0023 0.0075
Volume Resistivity	23 °C (73°F)	D257	ohm·cm	3.2 x 10 ¹⁶
Surface Resistivity	23 °C (73°F)	D257	ohm	2.0 x 10 ¹⁶



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DuPont™ Vespel® ST-2010 Typical Direct-Formed Properties (continued)

Miscellaneous	Temperature	ASTM	Units	Typical Values
Thermal Conductivity	23 °C to 260 °C	F433	(W·cm/cm ² ·°C) x 10 ⁻³	5.0
Coefficient of Linear Thermal Expansion	23 °C to 260 °C (73 °F to 500 °F)	D696	μ/m/°C (in/in/°F)	48 (27 x 10 ⁻⁶)
Water Absorption % change (weight) 24 h 48 h	23 °C (73°F)	D570	—	1.3 3.1
Deformation under 14 MPa Load	23 °C (73°F) 50 °C (122 °F)	D621	%	0.18 0.38
Specific Gravity	23 °C (73°F)	D272	—	1.38

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