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DUPONT

Vespel® is one of the highest performing engineering plastics currently available. Vespel® will not melt and can operate continuously from cryogenic temperatures to 550°F (288°C), with excursions to 900°F (482°C). Vespel® parts consistently exhibit superior performance in a variety of applications requiring low wear and long life in severe environments

ADVANTAGES:

Excellent Temperature Resistance · High Wear Resistance (Especially SP-21)
· Dimensionally Stable · Resistant To Radiation

APPLICATIONS INCLUDE:

Rotary Seal Rings · Thrust Washers And Discs · Bushings · Flanged bearings · Plungers · Printer Wire Guides · Spline Couplings · Wear Strips · Valve Seats · Thermal And Electrical Insulators · Wafer Clamping, Polishing And Grinding Rings · Wafer Guides and Carriers · Vacuum Pads · Die Pickup Collets

GENERAL PROPERTIES	ASTM or UL Test	SP-1 Typical Values	SP-21 Typical Values	SP-22 Typical Values	SP-211 Typical Values	SP-3 Typical Values
Filler Material	-	Unfilled	15% Graphite	40% Graphite	10% PTFE, 15% Graphite	15% Moly
PHYSICAL						
Density (g/cm ³)	D792	1.43	1.51	1.65	1.55	1.6
Water Absorption, 24 hrs @ 73°F (%)	D570	0.24	0.19	0.14	0.21	0.23
MECHANICAL @ 73°F						
Tensile Strength (psi x 10 ³)	D1708	12.5	9.5	7.5	6.5	8.2
Tensile Modulus (psi)	D1708	-	-	-	-	-
Tensile Elongation (%)	D1708	7.5	4.5	3	3.5	4
Flexural Strength (psi x 10 ⁵)	D790	0.16	0.16	0.13	0.1	0.11
Flexural Modulus (psi x 10 ⁵)	D790	4.5	5.5	7	4.5	4.75
Compressive Strength, 10% strain (psi x 10 ³)	D695	19.3	19.3	16.3	14.8	18.5
Compressive Modulus (psi x 10 ⁵)	D695	3.5	4.2	4.75	3	3.5
Hardness, Rockwell	D785	E45-60	E25-45	E5-25	E1-20	E40-55
IZOD Notched Impact (ft-lb/in)	D256	0.8	0.8	-	-	0.4
THERMAL						
Coeff. of Linear Thermal Expansion (x 10 ⁻⁶ in./in./°F)	D288	30	27	21	30	29
Heat Deflection Temp (°F / °C) @ 264 psi	D648	680 / 360	680 / 360	-	-	-
Max Continuous Operating Temp (°F / °C)	-	500 / 260	500 / 260	500 / 260	500 / 260	500 / 260
Thermal Conductivity (BTU-in/ft ² -hr-°F)	C177	2	6	12	5.3	3.2
Flammability Rating	UL94	V-0	V-0	V-0	V-0	V-0
ELECTRICAL						
Dielectric Strength (V/mil) Short Time, 1/8" Thick	D149	560	250	-	-	-
Dielectric Constant at 1 MHz	D150	3.55	13.41	-	-	-
Dissipation Factor at 1 MHz	D150	0.0034	0.0106	-	-	-
Volume Resistivity (ohm-cm) at 50% RH	D257	10 ¹⁴ - 10 ¹⁵	10 ¹² - 10 ¹³	-	-	-
MECHANICAL @ 500°F						
Tensile Strength (psi x 10 ³)	D1708	6	5.5	3.4	3.5	-
Tensile Elongation (%)	D1708	6	6	2	3	-
Flexural Strength (psi x 10 ³)	D790	9	9	6.5	5	5.5
Flexural Modulus (psi x 10 ⁵)	D790	2.5	3.7	4	2	2.7

NOTE: The information contained here in is typical values intended for reference only. They should NOT be used as a basis for design specifications or quality control.