



Technical Products, Inc.

P: 262-335-3635 | F: 262-335-3606

E: tpi@technicalproductsinc.com

www.technicalproductsinc.com

Vespel® SP-1 Material Specifications

Vespel® is one of the highest performing engineered plastics currently available. This high performance polyimide material has consistently exhibited superior performance in a variety of applications requiring low wear and long life in severe environments. Other Vespel® grades are available call or [email](mailto:tpi@technicalproductsinc.com) your request.

Physical Properties	Units	Test	SP-1
Density	lb/in ³	D792	0.051
	g/cm ³		1.43
Water Absorption	24hrs @ 73°F (%)	D570	0.24
	48hrs @ 122°F (%)		0.72

Mechanical Properties	Units	Test	SP-1
Tensile Strength, Ultimate	@ 73°F (psi)	D638	12,500
	@500°F (psi)		6,000
Tensile Elongation, Ultimate	@ 73°F (psi)	D638	7.5
	@500°F (psi)		6.0
Flexural Strength, Ultimate	@ 73°F (psi)	D790	16,000
	@500°F (psi)		9,000
Flexural Modulus	@ 73°F (psi)	D790	450,000
	@500°F (psi)		250,000
Compressive Strength	10% strain @ 73°F (psi)	D695	19,300
Compressive Modulus	psi	D695	350,000
Hardness Rockwell	-	D785	E45-60
Izod Impact Notched	ft-lb/in	D256	0.8
Poisson's Ratio	-	-	0.4

Thermal Properties	Units	Test	SP-1
Coefficient of Linear Thermal Expansion	X 10 ⁻⁵ in./in./°F	D696	3.0
Heat Deflection Temperature	@264 psi °F/°C	D648	680 / 360
Max. Use Temperature	°F/°C	-	500 / 260
Thermal Conductivity	BTU-in/ft ² -hr-°F	C177	2.0
	x 10 ⁻⁴ cal/cm-sec-°C		6.9
Flammability Rating	-	UL94	V-0

Electrical Properties	Units	Test	SP-1
Dielectric Strength	(V/mil) short time, 1/8" thick	D149	560
Dielectric Constant	@1 MHz	D150	3.55
Dissipation Factor	@1 MHz	D150	0.0034
Volume Resistivity	(ohm-cm) @50% RH	D257	10 ¹⁴ - 10 ¹⁵

**The information provided in this table is a compilation of publicly available data. This information is provided for comparison purposes only, and is not intended to be warrantable. Further, Technical Products, Inc. disclaims any and all liability from errors, in accuracies, or omissions.

Technical Products, Inc. PO Box 189 Hubertus, WI 53033

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