

# DuPont™ Vespel® SF

## POLYIMIDE FOAM PARTS

### Typical Polyimide Foam Properties

DuPont™ Vespel® SF parts and shapes are foam products used in applications requiring thermal insulation at high temperatures. Products are available in various densities to provide different mechanical properties.

*Some data presented below are based on limited production runs and are subject to revision as new knowledge and experience become available.*

Physical Property	Test Method	Unit	SF-0920 (Low Density)	SF-0930 (Med. Density)	SF-0940 (High Density)
Density Range	ASTM D3574 Test E	g/cc lb/ft <sup>3</sup>	0.15 ± 0.05 9.36 ± 3.0	0.3 ± 0.1 18.7 ± 6.0	0.5 ± 0.01 31.2 ± 6.0
Max Standard Thk		mm in	36.0 1.42	12.0 0.47	6.0 0.24
Standard Sheet Size		mm in	575 x 575 ~23 x 23	525 x 525 ~21 x 21	450 x 450 ~18 x 18
Mechanical Property					
Ultimate Tensile Strength	ASTM D3574 Test E	kPa psi	425 61.6	4,400 640	26,000 3,770
Tensile Modulus	ASTM D3574 Test E	kPa psi	—	106,700 15,480	521,200 75,600
Elongation at Break	ASTM D3574 Test E	%	—	7.94	9.08
Compression Force Test at 20%	ASTM D3574 Test C	kPa psi	120 17.4	1,760 255	32,400 4,700
Compression Force Test at 40%	ASTM D3574 Test C	kPa psi	200 29	3,800 550	52,700 7,640
Compression Modulus	ASTM D1621	kPa psi	—	1,640 238	320,600 46,500
Compressive Strength at 10%	ASTM D1621	kPa psi	—	2,000 290	25,400 3,680
Compressive Strength at 20%	ASTM D1621	kPa psi	—	3,400 490	41,000 6,000
Relative Permittivity (Dielectric Constant)	ASTM D1673	—	1.11	1.39	1.9
Dissipation (Capacitance) Factor	ASTM D1673	pf	2.52	3.04	4.21



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DuPont™ Vespel® SF-0900 Typical Direct-Formed Properties (continued)

Thermal	Test Method	Unit	SF-0920 (Low Density)	SF-0930 (Med. Density)	SF-0940 (Low Density)
Continuous Use Temperature	—	°C °F	300 572	300 572	300 572
Thermal Conductivity 25 °C (77 °F)	ASTM C518	W/(m-K)	0.033–0.036	0.0467	0.0657
CLTE (60–130 °F)	ASTM E228	10 <sup>-6</sup> in/in/°F	0.28	—	—
CLTE (130–200 °F)	ASTM E228	10 <sup>-6</sup> in/in/°F	0.13	—	—

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