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^3	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

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^{-6} in/in/°F	0.28	—	—
CLTE (130–200 °F)	ASTM E228	10^{-6} in/in/°F	0.13	—	—

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