

Dupont Vespel® SP-3 Polyimide, 15% MoS2 Filled

MoS2 added to provide dry lubrication for bearings in vacuum.

Physical Properties	Metric	English	Comments
Specific Gravity	1.6 g/cc	0.0578 lb/in ³	ASTM D792
Water Absorption	0.23 %	0.23 %	24 hrs @ 73°F.; ASTM D570
Water Absorption	0.65 %	0.65 %	48 hrs @ 122°F; ASTM D570
Deformation	0.12 %	0.12 %	2000 psi; 122°F; ASTM D621

Mechanical Properties

Hardness, Rockwell E	40 - 55	40 - 55	ASTM D785
Tensile Strength, Ultimate	56.5 MPa	8200 psi	73°F; ASTM D1708
Elongation at Break	4 %	4 %	73°F; ASTM D1708
Flexural Modulus	1.86 GPa	270 ksi	500°F; ASTM D790
Flexural Modulus	3.28 GPa	475 ksi	73°F; ASTM D790
Flexural Strength	75.8 MPa	11000 psi	73°F; ASTM D790
Flexural Strength	37.9 MPa	5500 psi	500°F; ASTM D790
Compressive Strength	128 MPa	18500 psi	@10% strain; 73°F; ASTM D695
Compressive Strength	34.5 MPa	5000 psi	@1% strain; 73°F; ASTM D695
Compressive Modulus	2.41 GPa	350 ksi	73°F; ASTM D695
Izod Impact, Unnotched	1.12 J/cm	2.1 ft-lb/in	73°F; ASTM D256
Coefficient of Friction	0.03	0.03	In vacuum
Coefficient of Friction	0.17	0.17	PV-100,000. Steady State; Unlubricated in air.
Coefficient of Friction	0.25	0.25	PV-25,000. Steady State; Unlubricated in air.
Izod Impact, Notched	0.214 J/cm	0.4 ft-lb/in	73°F; ASTM D256

Thermal Properties

CTE, linear 68°F	52.2 μm/m-°C	29 μin/in-°F	73-572°F; ASTM E- 228
Thermal Conductivity	0.461 W/m-K	3.2 BTU-in/hr-ft ² -°F	104°F
Maximum Service Temperature, Air	260 °C	500 °F w/trips to 900 °F	