PI VESPEL® SP1

POLYIMIDE VESPEL®

Material description

Vespel SP1 is a semi-crystalline thermoplastic whose thermal properties are otherwise only achieved by duromers. The material can be used at up to 300°C continuously and up to 480°C for short periods. Vespel SP1 has excellent thermal and electrical insulation properties. Specially modified material grades are available for use in wear applications.

Conformities

RoHS, REACH

Physical properties	Test method	Value	Unit
Density	DIN EN ISO 1183-1	1.43	g/cm3
Water absorbtion	DIN EN ISO 62	0.46	%
Sliding friction		◑	
Abrasion resistance		◑	

Mechanical properties	Test method	Value	Unit
Yield stress	DIN EN ISO 527	86	MPa
Elongation at break	DIN EN ISO 527	7.5	%
Tensile modulus of elasticity	DIN EN ISO 527	2200	MPa
Notched impact strength	DIN EN ISO 179	3.5	kJ/m2
Shore Hardness D	DIN EN ISO 868	85	

Thermal properties	Test method	Value	Unit
Thermal conductivity	DIN 52612-2	0.35	W/(m*K)
Coefficient of thermal expansion	DIN 53752	50	10^{-6*K}-1
Operating temperature short term		450	°C
Operating temperature long term		bis 240	°C
Heat deflection temperature	DIN EN ISO 75 / A	360	°C
Flammability	UL 94, 3 mm	V0	

Electrical properties	Test method	Value	Unit
Volume resistivity	IEC 60093	10^{16}	Ω * cm
Surface resistivity	IEC 60093	10^{15}	Ω * cm
Dielectric strength	IEC 60243	28	kV/mm

These technical data have been determined as average values by our suppliers from many individual measurements. In all measurements, the test specimens were tested in the dry state. We pass on the data with reservation. The table does not claim to be complete or correct. Material technology is subject to constant further development. No rights or guarantees can be derived from it. Own tests are necessary because the environmental and operating conditions (humidity, temperature, mechanical forces, radiation and chemicals, etc.) set limits in the application.

amsler & frey ag
Swiss-machined plastic parts

Amsler & Frey AG
Feldstrasse 26
5107 Schinznach-Dorf

T +41 56 463 60 70
info@amsler-frey.ch

As of 25.11.2026