Technical Specification Sheets

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Chemical Designation
PI (Polyimide)

Colour
black

Density
1.53 g/cm^3

Fillers
15% molydenum disulfide (MoS2)

Main features
- high thermal and mechanical capacity
- very good slide and wear properties
- low outgassing
- very good thermal stability
- good chemical resistance
- high creep resistance
- resistance against high energy radiation
- sensitive to hydrolysis in higher thermal range

Target Industries
- aircraft and aerospace technology
- cryogenic engineering
- precision engineering
- vacuum technology

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50 mm/min	95	MPa	DIN EN ISO 527-1		(1) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	1 mm/min	4100	MPa	DIN EN ISO 527-1		
Elongation at break (tensile test)	50 mm/min	3.5	%	DIN EN ISO 527-1		
Flexural strength	10 mm/min	140	MPa	DIN EN ISO 178		
Modulus of elasticity (flexural test)	2 mm/min	3900	MPa	DIN EN ISO 178		
Elongation at break (flexural test)	10 mm/min	4.0	%	DIN EN ISO 178		
Compression strength	10 mm/min	230	MPa	EN ISO 604		
Compression strength	10mm/min, 10% strain	165	MPa	EN ISO 604		
Compressive strain at break	10 mm/min	35.6	%	EN ISO 604		
Compression modulus	1 mm/min	2000	MPa	EN ISO 604		
Shore hardness	Shore D	88		DIN EN ISO 868		
Ball indentation hardness		265	MPa	ISO 2039-1	1)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		357	°C	-	1)	(1) DMA, maximum loss factor tan d (2) Thermal expansion XY/Z axis (3) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	200-300°C	5.0 / 5.7	10^{-5} K^{-1}	DIN 53 752	2)	
Thermal expansion (CLTE)	50-200°C	4.0 / 4.7	10^{-5} K^{-1}	DIN 53 752	3)	

Other properties	parameter	value	unit	norm		comment
Water absorption	24 h in water, 23°C	0.53	%	DIN EN ISO 62		(1) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Water absorption	24 h in water, 80°C	1.58	%	DIN EN ISO 62		
Outgassing in high vacuum		passed		ECSS-Q-70-02		
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)	