

Chemical Designation

PI (Polyimide)

Colour

black

Density

1.57 g/cm³

Fillers

graphite

Production process: direct forming

Main features

- very good thermal stability
- very good bearing and wear properties
- good wear resistance
- low thermal expansion
- high creep resistance
- high dimensional stability
- sensitive to hydrolysis in higher thermal range

Target Industries

- hot glass technology
- mechanical engineering
- aircraft and aerospace technology
- automotive industry

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Tensile strength	50 mm/min	51	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)	1 mm/min	5200	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	1.3	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	70	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	5500	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	1.3	%	DIN EN ISO 178	
Compression strength	10 mm/min	125	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain	120	MPa	EN ISO 604	
Compressive strain at break	10 mm/min	12	%	EN ISO 604	
Shore hardness	Shore D	83		DIN EN ISO 868	
<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Glass transition temperature		288	°C	-	1) (1) DMA, maximum loss factor tan d
Thermal expansion (CLTE)	50-200°C	1.5 / -	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	2) (2) Thermal expansion XYZ axis
Thermal expansion (CLTE)	200-300°C	2.7 / -	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	3) (3) Thermal expansion XYZ axis
Specific heat		0.97	J/(g*K)	-	
Thermal conductivity	40°C	1.66	W/(K*m)	DIN EN 821	
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Water absorption	24 h in water, 23°C	0,3	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1) (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.

