

Chemical Designation

PI (Polyimide)

Colour

anthracite

Density

1.49 g/cm³

Fillers

15% graphite

Main features

- very high thermal and oxidative resistance
- very low water absorption
- very good slide and wear properties
- high thermal and mechanical capacity
- good chemical resistance
- high creep resistance
- resistance against high energy radiation
- sensitive to hydrolysis in higher thermal range

Target Industries

- automotive industry
- conveyor technology
- hot glass technology
- mechanical engineering
- precision engineering

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Tensile strength	50 mm/min	93	MPa	DIN EN ISO 527-1	(1) eU
Modulus of elasticity (tensile test)	1 mm/min	4943	MPa	DIN EN ISO 527-1	(2) eA
Elongation at break (tensile test)	50 mm/min	3	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	131	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	4200	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	3.4	%	DIN EN ISO 178	
Compression strength	10 mm/min	208	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain	163	MPa	EN ISO 604	
Compressive strain at break	10 mm/min	36	%	EN ISO 604	
Compression modulus	1 mm/min	2067	MPa	EN ISO 604	
Impact strength (Charpy)	max 7.5 J	24.4	kJ/m ²	DIN EN ISO 179-1	1)
Notched impact strength (Charpy)	max 7.5 J	3.8	kJ/m ²	DIN EN ISO 179-1	2)
Shore hardness	Shore D	86		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		260	°C	DIN EN ISO 11357	(1) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	50-200°C	3.9 / 5.4	10 ⁻⁵ K ⁻¹	DIN 53 752	1)
Thermal expansion (CLTE)	200-300°C	5.3 / 7.3	10 ⁻⁵ K ⁻¹	DIN 53 752	2)
Thermal expansion (CLTE)	300-350°C	7.5 / 10.5	10 ⁻⁵ K ⁻¹	DIN 53 752	3)
<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	0.16	%	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	0.53	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

