

Chemical Designation

PI (Polyimide)

Colour

brown

Density

1.65 g/cm³

Fillers

glass fibres

Main features

- electrically static dissipative
- high thermal and mechanical capacity
- low thermal expansion
- high creep resistance
- resistance against high energy radiation

Target Industries

- electronics
- semiconductor technology
- cryogenic engineering
- electrical engineering
- mechanical engineering
- nuclear and vacuum technology

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Tensile strength	50 mm/min, 23°C	97	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)	1 mm/min, 23°C	5600	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min, 23°C	2,1	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min, 23°C	128	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min, 23°C	5588	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min, 23°C	2,3	%	DIN EN ISO 178	
Compression strength	10 mm/min, 23°C	254	MPa	EN ISO 604	
Compressive strain at break	10 mm/min, 23°C	21,4	%	EN ISO 604	
Compression modulus	1 mm/min	5890	MPa	EN ISO 604	
Shore hardness	Shore D, 23°C	92		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		329	°C	DIN EN ISO 11357	
Service temperature	lower operating temperature	- 20	°C	-	1)
Service temperature	short-term	300	°C	-	2)
Service temperature	long-term	250	°C	-	3)
Thermal expansion (CLTE)	23-100°C	32	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	4)
Thermal expansion (CLTE)	100-150°C	35	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	5)
Thermal expansion (CLTE)	50-200°C	35	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	6)
Specific heat		1,01	J/(g*K)	DIN EN 821	
Thermal conductivity	40°C	0,32	W/(K*m)	DIN EN 821	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
surface resistance	23°C	10 ⁰⁹ - 10 ¹¹	Ω	ANSI ESD STM 11.11	
surface resistivity	23°C	10 ¹⁰ - 10 ¹²	Ω/square	ANSI ESD STM 11.11	
volume resistance	23°C	10 ⁰⁹ - 10 ¹¹	Ω	ANSI ESD STM 11.12	
volume resistivity	23°C	10 ¹⁰ - 10 ¹²	Ω*cm	ANSI ESD STM 11.12	
<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	0.60	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

