

### Chemical Designation

PAI (Polyamide-imide)

### Colour

black-green opaque

### Density

1.62 g/cm<sup>3</sup>

### Fillers

glass fibres

production process: compression moulding

### Main features

- electrically insulating
- excellent strength and stiffness
- excellent dimensional stability
- very good thermal stability
- excellent chemical resistance

### Target Industries

- semiconductor technology
- aircraft and aerospace technology
- oil and gas industry
- chemical and refinery industry
- process engineering

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Modulus of elasticity (tensile test)	1mm/min	5950	MPa	DIN EN ISO 527-2	1) (1) For tensile test: specimen type 1b
Tensile strength at break	5mm/min	116	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Elongation at break (tensile test)	5mm/min	3,6	%	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Flexural strength	2mm/min, 10 N	174	MPa	DIN EN ISO 178	(4) For Charpy test: support span 64mm, norm specimen.
Modulus of elasticity (flexural test)	2mm/min, 10 N	5900	MPa	DIN EN ISO 178	(5) Specimen in 4mm thickness
Compression strength	1% / 2% / 5%	19/43/117	MPa	EN ISO 604	3)
Impact strength (Charpy)	max. 7,5J	40	kJ/m <sup>2</sup>	DIN EN ISO 179-1	4)
Ball indentation hardness		246	MPa	ISO 2039-1	5)
Shore hardness	D scale	87		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		284	°C	DIN EN ISO 11357	
Thermal expansion (CLTE)	23-60°C, longitudinal	3,1	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, longitudinal	3,2	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, longitudinal	3,5	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Dielectric strength		32	kV/mm	ISO 60243-1	1) (1) Specimen in 1mm thickness
Dissipation factor	@ 1 MHz	0,012		DIN 53 481	
Dissipation factor	@ 100 Hz	0,0054		DIN 53 481	
Dielectric constant	@ 1 MHz	3,57		DIN 53 481	
Dielectric constant	@ 100 Hz	3,80		DIN 53 481	
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Water absorption	24h (23°C)	0,12/0,28	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm

