

Chemical Designation

PAI (Polyamide-imide)

Colour

green opaque

Density

1.41 g/cm³

Fillers

unreinforced

production process: compression moulding

Main features

- good wear properties
- excellent strength and stiffness
- excellent dimensional stability
- very good thermal stability
- excellent chemical resistance

Target Industries

- electronics
- 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)	1 mm/min	3600	MPa	DIN EN ISO 527-2	1) (1) For tensile test: specimen type 1b
Tensile strength at break	5mm/min	122	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Elongation at break (tensile test)	5mm/min	8	%	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Flexural strength	2mm/min, 10 N	173	MPa	DIN EN ISO 178	(4) For Charpy test: support span 64mm, norm specimen.
Modulus of elasticity (flexural test)	2mm/min, 10 N	3600	MPa	DIN EN ISO 178	(5) Specimen in 4mm thickness
Compression strength	1% / 2% / 5%	12/32/90	MPa	EN ISO 604	3)
Impact strength (Charpy)	max. 7,5J	81	kJ/m ²	DIN EN ISO 179-1eU	4)
Ball indentation hardness		221	MPa	ISO 2039-1	5)
Shore hardness	D scale	85		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		285	°C	DIN EN ISO 11357	(1) Found in public sources.
Service temperature	short term	250	°C	-	1) Individual testing regarding application conditions is mandatory.
Service temperature	long term	210	°C	-	
Thermal expansion (CLTE)	23-60°C, longitudinal	4,2	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	
Thermal expansion (CLTE)	23-100°C, longitudinal	4,3	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	
Thermal expansion (CLTE)	100-150°C, longitudinal	4,7	10 ⁻⁵ K ⁻¹	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		26	kV/mm	ISO 60243-1	1) (1) Specimen in 1mm thickness
Dissipation factor	@ 1 MHz	0,019	Ω/sq	DIN 53 481	
Dissipation factor	@ 100 Hz	0,0055	%	DIN 53 481	
Dielectric constant	@ 1 MHz	3,5		DIN 53 481	
Dielectric constant	@ 100 Hz	3,8		DIN 53 481	
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Moisture absorption	24h / 96h (23°C)	0,4 / 0,57	%	DIN EN ISO 62	
Flammability (UL94)	3,2 mm	V0		-	

