

# TECATOR 5013 - Stock Shapes

## Chemical Designation

PAI (Polyamidimide)

## Colour

yellow-brown opaque

## Density

1.4 g/cm<sup>3</sup>

## Main features

- good impact strength
- high pressure resistance
- very good electrical insulation
- stiff
- high creep resistance
- high strength
- good wear resistance
- good thermal stability

## Target Industries

- electrical engineering
- precision engineering
- mechanical engineering
- vacuum technology
- aircraft and aerospace technology
- semiconductor technology
- automotive industry

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Modulus of elasticity (tensile test)	50 mm/min	3800	MPa	DIN EN ISO 527-2	1) (1) For tensile test: specimen type 1b
Tensile strength	50 mm/min	151	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50 mm/min	151	MPa	DIN EN ISO 527-2	
Elongation at break	50 mm/min	21	%	DIN EN ISO 527-2	
Modulus of elasticity (flexural test)	2 mm/min, 10 N	3900	MPa	DIN EN ISO 178	
Notched impact strength (Charpy)	2 J	13.2	kJ/m <sup>2</sup>	DIN EN ISO 179-1eA	
Ball indentation hardness		240	MPa	ISO 2039-1	
<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Glass transition temperature		280	°C	DIN 53765	1) (1) Found in public sources.
Melting temperature		n.a.	°C	DIN 53765	2) (2) n.a. = not applicable
Heat distortion temperature	1.82 MPa	278	°C	ASTM D 648	3) (3) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	short term	270	°C	-	3)
Service temperature	long term	250	°C	-	
Thermal expansion (CLTE)	23-55°C, long.	3.1	10 <sup>-5</sup> K <sup>-1</sup>	ASTM D 695	
Thermal conductivity		0.29	W/(K*m)	ASTM E1530	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Specific surface resistance		10 <sup>18</sup>	Ω	ASTM D 257	1) (1) Found in public sources.
Specific volume resistance		10 <sup>15</sup>	Ω*cm	ASTM D 257	2) (2) Found in public sources.
Dielectric strength		23	kV/mm	ASTM D 149	3) (3) Found in public sources.
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Moisture absorption in normal climates	23°C, 50% rel. air humidity	2.5	%	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.
Resistance to hot water/ bases		-	-	-	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

TECATOR has a high water uptake. Parts have to be pre-dried before fast heating to above 200 °C (drying process: 24 h per 3 mm wall thickness at 150 °C).

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