

## TECASINT 2391 black - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PI (Polyimide)

### Colour

black

### Density

1.53 g/cm<sup>3</sup>

### Fillers

15% molybdenum disulfide (MoS<sub>2</sub>)

### Main features

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

### Target Industries

- aircraft and aerospace technology
- cryogenic engineering
- precision engineering
- vacuum technology

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min, 23°C	95	MPa	DIN EN ISO 527-1	(1) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	1 mm/min, 23°C	4100	MPa	DIN EN ISO 527-1	(2) Ensinger Standard
Elongation at break (tensile test)	50 mm/min, 23°C	3.5	%	DIN EN ISO 527-1	
Elongation at break (tensile test)	10 mm/min, 23°C	4.0	%	DIN EN ISO 178	
Flexural strength	10 mm/min, 23°C	140	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min, 23°C	3900	MPa	DIN EN ISO 178	
Compression strength	10 mm/min, 23°C	230	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain, 23°C	165	MPa	EN ISO 604	
Compression modulus	1 mm/min, 23°C	2000	MPa	EN ISO 604	
Compressive strain at break	10 mm/min, 23°C	35.6	%	EN ISO 604	
Ball indentation hardness		265	MPa	ISO 2039-1	1)
Shore hardness	Shore D, 23°C	88	-	-	2)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		357	°C	-	1)
Thermal expansion (CLTE)	200-300°C	5.0 / 5.7	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	2)
Thermal expansion (CLTE)	50-200°C	4.0 / 4.7	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	3)
					(1) DMA, maximum loss factor tan δ (2) Thermal expansion XY/Z axis (3) Thermal expansion XY/Z axis
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	0.53	%	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	1.58	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

→ TECASINT 2000 series show significant water uptake. Parts have to be pre-dried before fast heating to above 200 °C (drying process: 2 h per 3 mm wall thickness at 150 °C).

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