

## TECASINT 5501 ESD light-brown - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PI (Polyimide)

### Colour

brown

### Density

1.68 g/cm<sup>3</sup>

### 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

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	93	MPa	DIN EN ISO 527-1	(1) eU (2) Ensinger Standard
Modulus of elasticity (tensile test)	1 mm/min	7000	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	1.5	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	127	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	6900	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	2.7	%	DIN EN ISO 178	
Compression strength	10 mm/min	260	MPa	EN ISO 604	
Compressive strain at break	10 mm/min	20	%	EN ISO 604	
Impact strength (Charpy)	max 7.5 J	16.1	kJ/m <sup>2</sup>	DIN EN ISO 179-1	1)
Rockwell hardness	M	119		ISO 2039/2	
Shore hardness	Shore D	93		-	2)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		329	°C	DIN EN ISO 11357	(1) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	short-term	300	°C	-	1)
Thermal expansion (CLTE)	23-100°C	2.6	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	2)
Thermal expansion (CLTE)	100-150°C	2.9	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	3)
Thermal expansion (CLTE)	50-200°C	2.9	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	4)
Specific heat		1.04	J/(g*K)	DIN EN 821	(4) Thermal expansion XY axis
Thermal conductivity	40°C	0.34	W/(K*m)	DIN EN 821	
Electrical properties	parameter	value	unit	norm	comment
surface resistivity	23°C	10 <sup>6</sup> - 10 <sup>8</sup>	Ω	DIN EN 61340-2-3	
volume resistivity	23°C	10 <sup>9</sup> - 10 <sup>8</sup>	Ω*cm	DIN EN 61340-2-3	
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	0.63	%	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.
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

→ TECASINT 5000 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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