

## 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
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)
Shore hardness	Shore D	93		DIN EN ISO 868	
Rockwell hardness	M	119		ISO 2039/2	
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.
Heat distortion temperature	1,8 MPa	347	°C	DIN 53 461	
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	
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>6</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	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1) (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.

→ 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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