TECASINT 5511 SD light-brown - Stock Shapes (rods, plates, tubes)

Chemical Designation
PI (Polyimide)

Colour
brown

Density
1.65 g/cm^3

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, 23°C	97	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)	1 mm/min, 23°C	5600	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min, 23°C	2,1	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min, 23°C	128	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min, 23°C	5588	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min, 23°C	2,3	%	DIN EN ISO 178	
Compression strength	10 mm/min, 23°C	254	MPa	EN ISO 604	
Compressive strain at break	10 mm/min, 23°C	21,4	%	EN ISO 604	
Compression modulus	1 mm/min	5890	MPa	EN ISO 604	
Shore hardness	Shore D, 23°C	92		DIN EN ISO 868	

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. (2) Found in public sources. Individual testing regarding application conditions is mandatory. (3) Found in public sources. Individual testing regarding application conditions is mandatory. (4) Thermal expansion XY axis (5) Thermal expansion XY axis (6) Thermal expansion XY axis
Service temperature	lower operating temperature	- 20	°C	-	1)	
Service temperature	short-term	300	°C	-	2)	
Service temperature	long-term	250	°C	-	3)	
Thermal expansion (CLTE)	23-100°C	32	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	4)	
Thermal expansion (CLTE)	100-150°C	35	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	5)	
Thermal expansion (CLTE)	50-200°C	35	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	6)	
Specific heat		1,01	J/(g*K)	DIN EN 821		
Thermal conductivity	40°C	0,32	W/(K*m)	DIN EN 821		

Electrical properties	parameter	value	unit	norm	comment
surface resistance	23°C	10^{09} - 10^{11}	Ω	ANSI ESD STM 11.11	
surface resistivity	23°C	10^{10} - 10^{12}	Ω/square	ANSI ESD STM 11.11	
volume resistance	23°C	10^{09} - 10^{11}	Ω	ANSI ESD STM 11.12	
volume resistivity	23°C	10^{10} - 10^{12}	Ω*cm	ANSI ESD STM 11.12	

Other properties	parameter	value	unit	norm		comment
Water absorption	24 h in water, 23°C	0.60	%	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 shows 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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