

TECASINT 5051 grey-green - Stock Shapes (rods, plates, tubes)

Chemical Designation

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Colour

dark brown

Density

1.56 g/cm³

Fillers

glass fibres

Main features

- high thermal and mechanical capacity
- very good electrical insulation
- good wear properties
- low thermal expansion
- resistance against high energy radiation
- high creep resistance
- sensitive to hydrolysis in higher thermal range

Target Industries

- semiconductor technology
- electronics
- mechanical engineering
- cryogenic engineering

Mechanical properties

	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	110	MPa	DIN EN ISO 527-1	(1) eU
Modulus of elasticity (tensile test)	1 mm/min	6500	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	2.2	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	162	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	6600	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	2.6	%	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	
Compression modulus	1 mm/min	3000	MPa	EN ISO 604	
Impact strength (Charpy)	max 7.5 J	20	kJ/m ²	DIN EN ISO 179-1	1)
Shore hardness	Shore D	92	-	DIN EN ISO 868	

Thermal properties

	parameter	value	unit	norm	comment
Glass transition temperature		330	°C	-	1)
Heat distortion temperature	1.8 MPa	344	°C	DIN 53 461	
Thermal expansion (CLTE)	23-100°C	2.8 / -	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	2)
Thermal expansion (CLTE)	100-150°C	2.8 / -	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	3)
Thermal expansion (CLTE)	50-200°C	2.8 / -	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	4)
Specific heat		1.04	J/(g*K)	DIN EN 821	
Thermal conductivity	40°C	0.3	W/(K*m)	DIN EN 821	

Electrical properties

	parameter	value	unit	norm	comment
surface resistivity	23°C	> 10 ¹⁴	Ω	DIN EN 61340-2-3	
volume resistivity	23°C	> 10 ¹⁴	Ω*cm	DIN EN 61340-2-3	
Electric strength DC		24	kV*mm ⁻¹	ISO 60243-1	
Dielectric loss factor	50 Hz	3.2*10 ⁻²		DIN 53483-1	
Dielectric loss factor	1 kHz	2.2*10 ⁻³		DIN 53483-1	
Dielectric loss factor	1 MHz	1.1*10 ⁻²		DIN 53483-1	
Dielectric constant	50 Hz	3.0		DIN 53483-1	
Dielectric constant	1 kHz	2.9		DIN 53483-1	
Dielectric constant	1 MHz	2.9		DIN 53483-1	

Other properties

	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	0.48	%	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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