

TECASINT 2031 - Stock Shapes

Chemical Designation

PI (Polyimide)

Colour

anthracite

Density

1.59 g/cm³

Fillers

40% graphite

Main features

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

Target Industries

- automotive industry
- aircraft and aerospace technology
- cryogenic engineering
- conveyor technology
- hot glass technology
- mechanical engineering
- precision engineering

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1 mm/min, 23°C	6300	MPa	DIN EN ISO 527-1	
Tensile strength	50 mm/min, 23°C	65	MPa	DIN EN ISO 527-1	
Elongation at break	50 mm/min, 23°C	2.1	%	DIN EN ISO 527-1	
Elongation at break	10 mm/min, 23°C	2.2	%	DIN EN ISO 178	
Flexural strength	10 mm/min, 23°C	87.5	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min, 23°C	5200	MPa	DIN EN ISO 178	
Compression strength	10 mm/min, 23°C	131	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain, 23°C	124	MPa	EN ISO 604	
Compression modulus	1 mm/min, 23°C	2027	MPa	EN ISO 604	
Compressive strain at break	10 mm/min, 23°C	12.5	%	EN ISO 604	
Impact strength (Charpy)	max 7.5 J, 23°C	14.2	kJ/m ²	DIN EN ISO 179-1eU	
Notched impact strength (Charpy)	max 7.5 J, 23°C	3.3	kJ/m ²	DIN EN ISO 179-1eA	
Shore hardness	Shore D, 23°C	84	D	DIN 53505	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		370	°C	-	1) (1) DMA, maximum loss factor tan d
Heat distortion temperature	1.8 MPa	325	°C	DIN 53 461	2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	long-term	-	°C	-	2) Individual testing regarding application conditions is mandatory.
Thermal expansion (CLTE)	50-200°C	3.0 /	10 ⁻⁵ K ⁻¹	DIN 53 752	3) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	200-300°C	3.8 /	10 ⁻⁵ K ⁻¹	DIN 53 752	4) Thermal expansion XY/Z axis
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	1.2	%	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	2.18	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

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