

TECASINT 4021 black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PI (Polyimide)

Colour

anthracite

Density

1.49 g/cm³

Fillers

15% graphite

Main features

- very high thermal and oxidative resistance
- very low water absorption
- very good slide and wear properties
- high thermal and mechanical capacity
- good chemical resistance
- high creep resistance
- resistance against high energy radiation
- sensitive to hydrolysis in higher thermal range

Target Industries

- automotive industry
- conveyor technology
- hot glass technology
- mechanical engineering
- precision engineering

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min, 23°C	93	MPa	DIN EN ISO 527-1	(1) eU
Modulus of elasticity (tensile test)	1 mm/min, 23°C	4943	MPa	DIN EN ISO 527-1	(2) eA (3) Ensinger Standard
Elongation at break (tensile test)	50 mm/min, 23°C	3	%	DIN EN ISO 527-1	
Elongation at break (tensile test)	10 mm/min, 23°C	3.4	%	DIN EN ISO 178	
Flexural strength	10 mm/min, 23°C	131	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min, 23°C	4200	MPa	DIN EN ISO 178	
Compression strength	10 mm/min, 23°C	208	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain, 23°C	163	MPa	EN ISO 604	
Compressive strain at break	10 mm/min, 23°C	36	%	EN ISO 604	
Compression modulus	1 mm/min, 23°C	2067	MPa	EN ISO 604	
Impact strength (Charpy)	max 7.5 J, 23°C	24.4	kJ/m ²	DIN EN ISO 179-1	1)
Notched impact strength (Charpy)	max 7.5 J, 23°C	3.8	kJ/m ²	DIN EN ISO 179-1	2)
Shore hardness	Shore D, 23°C	86	-	-	3)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		260	°C	DIN EN ISO 11357	(1) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	50-200°C	3.9 / 5.4	10 ⁻⁵ K ⁻¹	DIN 53 752	1) (2) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	200-300°C	5.3 / 7.3	10 ⁻⁵ K ⁻¹	DIN 53 752	2) (3) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	300-350°C	7.5 / 10.5	10 ⁻⁵ K ⁻¹	DIN 53 752	3)
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	0.16	%	DIN EN ISO 62	(1) Corresponding means no listing at UL (yellow card).
Water absorption	24 h in water, 80°C	0.53	%	DIN EN ISO 62	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)

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