

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). 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	0.53	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

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