

TECASINT 1021 black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PI (Polyimide)

Colour

black

Density

1.41 g/cm³

Fillers

15% graphite

Main features

- very good slide and wear properties
- very good thermal stability
- good wear resistance
- good chemical resistance
- high thermal and mechanical capacity
- resistance against high energy radiation
- high creep resistance
- 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
Tensile strength	50 mm/min, 23°C	97	MPa	DIN EN ISO 527-1	(1) eU
Modulus of elasticity (tensile test)	1 mm/min, 23°C	4000	MPa	DIN EN ISO 527-1	(2) eA (3) Ensinger Standard
Elongation at break (tensile test)	50 mm/min, 23°C	3.2	%	DIN EN ISO 527-1	
Elongation at break (tensile test)	10 mm/min, 23°C	4.0	%	DIN EN ISO 178	
Flexural strength	10 mm/min, 23°C	150	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min, 23°C	4000	MPa	DIN EN ISO 178	
Compression strength	10 mm/min, 23°C	210	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain, 23°C	175	MPa	EN ISO 604	
Compression modulus	1 mm/min, 23°C	1880	MPa	EN ISO 604	
Compressive strain at break	10 mm/min, 23°C	20.1	%	EN ISO 604	
Impact strength (Charpy)	max 7.5 J, 23°C	34	kJ/m ²	DIN EN ISO 179-1	1)
Notched impact strength (Charpy)	max 7.5 J, 23°C	3.7	kJ/m ²	DIN EN ISO 179-1	2)
Shore hardness	Shore D, 23°C	88	-	-	3)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		353	°C	-	1)
Heat distortion temperature	1.85 MPa	300	°C	DIN 53 461	
Service temperature	long-term	-	°C	-	2)
Thermal expansion (CLTE)	50-200°C	3.8 /	10 ⁻⁵ K ⁻¹	DIN 53 752	3)
Specific heat		1.16	J/(g*K)	-	
Thermal conductivity	40°C	0.80	W/(K*m)	ISO 8302	
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	0.78	%	DIN EN ISO 62	(1) Corresponding means no listing at UL (yellow card).
Water absorption	24 h in water, 80°C	1.57	%	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)

→ TECASINT 1000 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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