

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	condition	value	unit	test method	comment
Tensile strength	50 mm/min	97	MPa	DIN EN ISO 527-1	(1) eU (2) eA
Modulus of elasticity (tensile test)	1 mm/min	4000	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	3.2	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	150	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	4000	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	4.0	%	DIN EN ISO 178	
Compression strength	10 mm/min	210	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain	175	MPa	EN ISO 604	
Compressive strain at break	10 mm/min	20.1	%	EN ISO 604	
Compression modulus	1 mm/min	1880	MPa	EN ISO 604	
Impact strength (Charpy)	max 7.5 J	34	kJ/m ²	DIN EN ISO 179-1	1)
Notched impact strength (Charpy)	max 7.5 J	3.7	kJ/m ²	DIN EN ISO 179-1	2)
Shore hardness	Shore D	88		DIN EN ISO 868	

Thermal properties	condition	value	unit	test method	comment
Glass transition temperature		667	°F	-	1)
Thermal expansion (CLTE)	122-392°F	38 /	10 ⁻⁶ K ⁻¹	DIN 53 752	2)
Specific heat		1.16	J/(g*K)	-	
Thermal conductivity	104°F	0.80	W/(K*m)	ISO 8302	

Other properties	condition	value	unit	test method	comment
Water absorption	24 h in water, 73°F	0.78	%	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, 176°F	1.57	%	DIN EN ISO 62	
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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