

TECASINT 2021 black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PI (Polyimide)

Colour

black

Density

1.45 g/cm³

Fillers

15% graphite

Main features

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

Target Industries

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

Mechanical properties	condition	value	unit	test method	comment
Tensile strength	0.40 inch/min	99	MPa	ASTM D 638	(1) eU
Modulus of elasticity (tensile test)	0.04 inch/min	4392	MPa	ASTM D 638	(2) eA
Elongation at break (tensile test)	0.40 inch/min	5.0	%	ASTM D 638	
Flexural strength	0.05 inch/min	150	MPa	ASTM D 790	
Modulus of elasticity (flexural test)	0.05 inch/min	4249	MPa	ASTM D 790	
Elongation at break (flexural test)	0.05 inch/min	4.9	%	ASTM D 790	
Compression strength	0.05 inch/min, 10% strain	165	MPa	ASTM D 695	
Compression modulus	0.05 inch/min	4239	MPa	ASTM D 695	
Impact strength (Charpy)	max 7.5 J	36.7	kJ/m ²	DIN EN ISO 179-1	1)
Notched impact strength (Charpy)	max 7.5 J	2.9	kJ/m ²	DIN EN ISO 179-1	2)
Shore hardness	Shore D	87		DIN EN ISO 868	
Thermal properties	condition	value	unit	test method	comment
Glass transition temperature		675	°F	-	1)
Heat distortion temperature	1.8 MPa	635	°F	DIN 53 461	(1) DMA, maximum loss factor tan d
Thermal expansion (CLTE)	122-392°F	38 / 45	10 ⁻⁶ K ⁻¹	DIN 53 752	(2) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	392-572°F	46 / 54	10 ⁻⁶ K ⁻¹	DIN 53 752	(3) Thermal expansion XY/Z axis
Other properties	condition	value	unit	test method	comment
Water absorption	24 h in water, 73°F	0.61	%	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	1.69	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

→ TECASINT 2000 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).

Our information and statements reflect the current state of our knowledge and shall inform about our products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for use in medical or dental implants. Existing commercial patents have to be observed. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. Unless otherwise noted, these values were determined by tests at reference dimensions and machined specimen. As the properties depend on the dimensions of the semi-finished products and the orientation in the component (esp. in reinforced grades), the material may not be used without a separate testing under individual circumstances. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Data sheet values are subject to periodic review, the most recent update can be found at www.ensingerplastics.com. Technical changes reserved.

Ensinger Sintimid GmbH
Ensingerplatz 1,
4863 Seewalchen, Austria

Tel: +43 7662 88788 0
Telefax: +43 (0) 76 62 88788-171
tecasint@ensingerplastics.com
www.ensingerplastics.com

Date: 2023/11/16

Version: AD