

## TECASINT 2031 black - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PI (Polyimide)

### Colour

anthracite

### Density

1.59 g/cm<sup>3</sup>

### Fillers

40% graphite

### Main features

- high thermal and mechanical capacity
- very good slide and wear properties
- very good thermal stability
- very high creep resistant
- good wear resistance
- low thermal expansion
- resistance against high energy radiation
- 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	52	MPa	DIN EN ISO 527-1	(1) eU (2) eA
Modulus of elasticity (tensile test)	1 mm/min	5100	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	1.8	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	87	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	4800	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	2.0	%	DIN EN ISO 178	
Compression strength	10 mm/min	125	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain	120	MPa	EN ISO 604	
Compression modulus	1 mm/min	1800	MPa	EN ISO 604	
Compressive strain at break	10 mm/min	12.5	%	EN ISO 604	
Impact strength (Charpy)	max 7.5 J	14.2	kJ/m <sup>2</sup>	DIN EN ISO 179-1	1)
Notched impact strength (Charpy)	max 7.5 J	3.3	kJ/m <sup>2</sup>	DIN EN ISO 179-1	2)
Shore hardness	Shore D	82		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		355	°C	-	1)
Heat distortion temperature	1.8 MPa	325	°C	DIN 53 461	(1) DMA, maximum loss factor tan d (2) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	50-200°C	3.0 /	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	2)
Thermal expansion (CLTE)	200-300°C	3.8 /	10 <sup>-5</sup> K <sup>-1</sup>	DIN 53 752	3) Thermal expansion XY/Z axis
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	1.2	%	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	2.2	%	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](http://www.ensingerplastics.com). Technical changes reserved.

Manufactured by: Ensinger Group,  
a German based plastic manufacturer

Represented by:  
Ensinger Asia Holding Pte Ltd.  
(Singapore Branch)  
for Southeast Asia

63 Hillview Avenue #02-03  
Lam Soon Industrial Building  
Singapore 669569  
Tel +65 65524177  
Fax +65 65525177  
[www.ensingerplastics.com/en-sg/](http://www.ensingerplastics.com/en-sg/)

Date: 2022/03/25

Version: AC