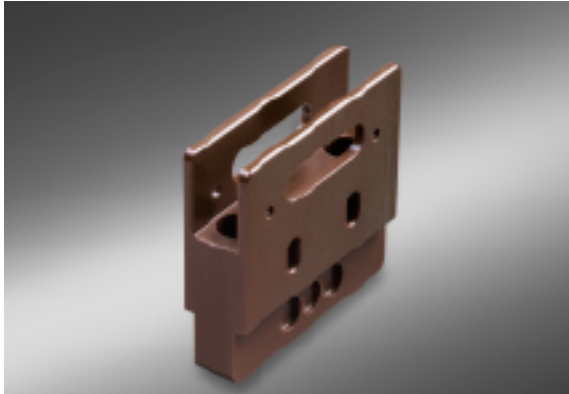


TECASINT 2000

Insulating part

TECASINT 2000 is an amorphous high-temperature polyimide. The material has an outstanding thermal long term durability and a high creep resistance under a mechanical load. Furthermore **TECASINT 2000** surpasses with its high impact resistance, low water absorption and a high modulus of elasticity. Parts produced with **TECASINT 2000** can be precision machined to very precise measurements and tight tolerances.

TECASINT 2011 (unfilled type)

Maximum strength and elongation, optimum electrical insulation, highest modulus, minimal thermal conductivity.

TECASINT 2021 (15% graphite)

Enhanced wear resistance and thermal ageing, for lubricated and dry applications.

TECASINT 2031 (40% graphite)

Reduced thermal elongation, maximum creep strength, for bearings under extreme load, where reduced strength is possible, for parts with tight tolerances.

TECASINT 2061 (15% graphite + 10% PTFE)

Lowest static friction, for applications requiring low friction and wear properties at medium temperatures and loads.

TECASINT 2391 (15% MoS₂)

Optimum sliding friction properties and low wear specifically for applications in vacuum or inert gases (techn. dry)
Low outgassing acc. to ESA test for space exploration.



Cover

Preferred fields

Mechanical engineering, automotive, conveyor technology, cryotechnology, aerospace, vacuum technology, precision engineering, hot glass technology, electronic, semiconductor

Applications

Sliding rails, chain guides, piston rings, bearing discs, bushes

TECASINT 2011: static seal, insulator

TECASINT 2021: valve seats, friction rings, hot glass grippers

Properties

- | High thermal-mechanical load. Non-sensitive under thermo-shock conditions.
- | Very high creep resistance
- | Outstanding sliding-properties and wear resistance
- | Resistant to high energy radiation
- | Low outgassing, high purity
- | Good chemical resistance
- | Inherently flame resistant according to UL94 V-0
- | Easily machinable to tight tolerances

Property values	semi-finished					
		TECASINT 2011	TECASINT 2021	TECASINT 2031	TECASINT 2391	TECASINT 2061
Abbreviation		PI	PI CS15	PI CS 40	PI MoS ₂ 15	PI CS15 TF 10
Density (ASTM D 792, DIN EN ISO 1183)	ρ g/cm ³	1,38	1,45	1,59	1,54	1,52
Tensile strength at break (DIN EN ISO 527)	σ_R MPa	118	101	65	95	63
Elongation at break (DIN EN ISO 527, 23 °C)	ϵ_R %	4,5	3,7	2,1	2,9	2,7
Modulus of elasticity after tensile test (DIN EN ISO 527)	E_z MPa	3700	4400	6300	4400	3900
Flexural strength (DIN EN ISO 178)	σ_B MPa	177	145	87,5	137	89
Modulus of elasticity after flexural test (DIN EN ISO 178)	E_B MPa	3600	4300	5207	4136	3490
Hardness (Shore D, DIN 53505)	H	90	87	84	90	84
Impact resistance (DIN EN ISO 179 (Charpy))	a_0 kJ/m ²	87,9	20,6	14,2	-	19,4
Glass transition temperature (DIN EN ISO 3146)	T_g °C	370	370	370	370	370
Thermal conductivity (23°C)	λ W/(K·m)	0,22		-	-	
Specific heat (23 °C)	c J/(g·K)	0,925		-	-	
Coefficient of linear thermal expansion (50-200 °C, DIN 53752)	α 10 ⁻⁵ 1/K	5,4	4,1	3,0	-	4,0
Volume resistance (DIN IEC 60093, EC 93)	ρ_D Ω cm	8x10 ¹⁵				
Surface resistance (EC 93, DIN IEC 60093)	R_Ω	5 x 10 ¹⁵				
Dielectric constant (10 ⁶ Hz, DIN 53 483, IE-250)	ϵ_r	4,2				
Dielectric loss factor (27 MHz, DIN 53 483, IE-250)	$\tan \delta$	3 x 10 ⁻³				
Dielectric strength (DIN ISO 60243-1)	E_d kV/mm	21,8				
Water absorption (24 h, 23 °C, in water, EN ISO 62)	W_s %	0,47	0,44		0,53	0,35
Flammability acc. to UL-Standard 94		V0	V0			

Testing on semi-finished products.

The information corresponds with current knowledge and indicates our products and possible applications. We cannot give you a legally binding guarantee of the physical properties or the suitability for a specific application. Existing commercial patents are to be taken in account.

Please find information concerning the exclusion of liability and Terms and Conditions of Delivery in our Semi-finished products catalogue or at www.ensinger-online.com.

All specification without guarantee.

Stock program

Rods

Tolerances: + 0,2 / + 0,8

Diameter: 6 - 100 mm

Stock length:

Ø 6-12 mm: 395 mm

Ø 12,7-15 mm: 395 mm, 795 mm

ab Ø 16 mm: 395 mm, 795 mm,
1000 mm.

Other delivery lengths possible, also available ground.

Plates

Tolerances:

Thickness 5-20 mm: 0 / + 0,8 mm

Thickness 20-60 mm: 0 / 1 mm

Thickness 65-100 mm: 0 / 1,5 mm.

Thickness: 6 - 100 mm

Widths:

Thickness 5-55 mm: 300 / 395 mm

from thickness 60 mm: 300 mm

Stock length:

Width 300 mm: stock length 1000 mm

Width 395 mm: stock length 795 mm

Andere Lieferlängen möglich.

Tubes available on request.