

TECASINT™ 2000 SERIES

(polyimide)

TECASINT™ 2000 series of polyimide stock shapes provide a superior combination of high temperature and bearing and wear, properties that make it an ideal choice for the most demanding applications.

TECASINT™ 2011 is very pure, and exhibits low outgassing. It is also characterized by its long-term thermal stability, outstanding wear resistance, high creep resistance, and strength up to its continuous use temperature of 536° F.

TECASINT™ 2021 contains 15% graphite and is also available for applications requiring improved wear resistance & lower coefficient of friction.

- **Superior high temperature characteristics**

TECASINT™ 2000 series can operate up to 536° F continuously.

- **Excellent long-term thermal stability**

- **Outstanding bearing and wear properties**

At elevated temperatures, TECASINT™ 2000 formulations offer superior wear rates.

- **Excellent creep resistance**

- **High strength and stiffness properties**

- **High purity characteristics**

Only extremely low levels of extractables and ionic impurities are apparent in TECASINT™ 2011.

- **Good chemical resistance**

TECASINT™ 2000 series is not attacked by common solvents or fuels and is acceptable for use in contact with many acids.

TECASINT™ 2000 series with their superior physical properties, are ideal for applications in the aerospace, nuclear, automotive, electrical/electronics, and chemical processing industries. TECASINT™ shapes are excellent candidates for high purity applications in the semiconductor processing industry. Typical components produced from TECASINT™ applications include seals, thrust washers, brushings and wear pads in transportation/off-highway equipment, insulating and support elements in electrical welding and brazing equipment, and wafer-handling components in the harsh environment of semiconductor plasma ovens. Pump and valve seals, vanes, and piston rings are also commonly produced from TECASINT™ series materials.

TYPICAL PROPERTY VALUES

	PROPERTIES	ASTM Test Method	Units	TECASINT™ 2011 Unfilled	TECASINT™ 2021 15% graphite
PHYSICAL	Density	D792	lbs/in ³	0.0499	0.0527
	Specific Gravity	D792	-	1.38	1.46
	Water Absorption, @ 24 hours, 73°F	D570	%	0.24	1.27
	@ Saturation, 73°F	D570	%	-	-
MECHANICAL	Tensile Strength @ Yield, 73°F	D638	psi	17,110	14,645
	Tensile Modulus	-	psi	681,500	638,000
	Elongation @ Break, 73°F	D638	%	4.4	3.7
	Flexural Strength, 73°F	D790	psi	25,700	20,700
	Flexural Modulus, 73°F	D790	psi	522,000	587,000
	Compressive Strength	D695	psi	-	-
	Charpy Impact Strength, Notched 73°F	D256	ft-lbs/in ²	41.8	9.8
	Rockwell Hardness, 73°F	D785	E scale	94	-
	Shore Hardness	D2204	D scale	90	87
	Wear Factor Against Steel, 40 psi, 50 fpm	-	-	-	-
	Static Coefficient of Friction	-	-	-	-
Dynamic Coefficient of Friction, 40 psi, 50 fpm	-	-	-	-	
THERMAL	Heat Deflection Temperature @ 66 psi	D648	°F	-	-
	@ 264 psi	D648	°F	>600	>600
	Coefficient of Linear Thermal Expansion	D696	in/in/°F	3.0 x 10 ⁻⁵	2.3 x 10 ⁻⁵
	Maximum Servicing Temperature, Intermittent	-	°F	626	626
	Long Term	-	°F	536	536
	Specific Heat	E1269	BTU/lb-°F	0.221	-
	Thermal Conductivity	C177	BTUin/hr-ft ² -°F	1.53	-
	Vicat Softening Point	-	-	-	-
	Melting Point	-	-	-	-
Flammability	UL 94	V-O	--	--	
ELECTRICAL	Surface Resistivity	D 257	ohm/sq	5.0 x 10 ¹⁵	-
	Volume Resistivity	D257	ohm-cm	8.0 x 10 ¹⁵	-
	Dielectric Strength	D149	V/mil	554	-
	Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150	-	-	-
	@ 1 MHz	-	-	4.2	-
	@ 20 GHz	-	-	-	-
	@ 30 GHz	-	-	-	-
	Dissipation Factor, @ 60 HZ, 73°F	-	-	3 x 10 ⁻³	-

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MATERIAL AVAILABILITY

Rods: Diameters: 3/4" and less diameter, 15" length
3/4" - 2" diameter, 15" - 30" length

Plates: 1/4" to 2" thickness inclusive are 15" x 15" or 15" x 30"

Shapes Specification (Typical)

Primary Specification (Typical)

Profiles, tubes, and special sizes are custom-produced on request.



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