



SINTIMID™ V

(polyimide)

SINTIMID™ V 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. SINTIMID™ V

is characterized by its long-term thermal stability, outstanding wear resistance, high creep resistance, and strength up to its continuous use temperature of 572° F. Specialty grades

containing internal lubricants such as PTFE and graphite are available for applications requiring improved wear resistance and lower coefficients of friction.

- **Superior high temperature characteristics**

SINTIMID™ V can operate up to 572° F continuously.

- **Excellent long-term thermal stability**

- **Outstanding bearing and wear properties**

At elevated temperatures, SINTIMID™ V formulations offer superior wear rates.

- **Excellent creep resistance**

- **High strength and stiffness properties**

SINTIMID™ V has a tensile strength of 20,000 psi at room temperature.

- **High purity characteristics**

Only extremely low levels of extractables and ionic impurities are apparent in SINTIMID™ V.

- **Good chemical resistance**

SINTIMID™ V is not attacked by common solvents or fuels and is acceptable for use in contact with many acids.

SINTIMID™ V with its superior physical properties, is ideal for applications in the aerospace, nuclear, automotive, electrical/electronics, and chemical processing industries. SINTIMID™ V is an excellent candidate for high purity applications in the semiconductor processing industry. Typical components produced from SINTIMID™ V include seals, thrust washers, bushings 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 SINTIMID™ V.

TYPICAL PROPERTY VALUES

PROPERTIES	ASTM Test Method	Units	Sintimid™ Unfilled	Sintimid™ 15% graphite	Sintimid™ 40% graphite	Sintimid™ V-HP high-purity	Sintimid™ V-HPHT high purity high temp
PHYSICAL	Density	D792 lbs/cu in	0.0484	0.0509	0.0563	0.0484	0.0488
	Specific Gravity	D792 -	1.34	1.41	1.56	1.34	1.35
	Water Absorption, @ 24 hours, 73°F	D570 %	0.62	0.65	0.87	0.62	1.86
	@ Saturation, 73°F	-	-	-	-	-	-
MECHANICAL	Tensile Strength @ Yield, 73°F	D638 psi	20,300	13,100	9,400	20,300	16,800
	Tensile Modulus	- psi	-	-	-	-	-
	Elongation @ Break, 73°F	D638 %	9	3.5	2.2	9	9
	Flexural Strength, 73°F	D790 psi	29,700	19,400	14,500	29,700	25,200
	Flexural Modulus, 73°F	D790 psi	580,000	580,000	580,000	580,000	580,000
	Compressive Strength	D695 -	-	-	-	-	-
	Izod Impact Strength, Notched 73°F	D256 ft-lbs/in	0.6	0.4	0.3	0.6	0.82
	Rockwell Hardness, 73°F	D785 M scale	120	115	111	120	125
	Shure Hardness	-	-	-	-	-	-
	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	>600	600	695
Coefficient of Linear Thermal Expansion		D696 in/in/°F	28 x 10 ⁻⁹	18 x 10 ⁻⁶	17 x 10 ⁻⁶	28 x 10 ⁻⁶	27 x 10 ⁻⁶
Maximum Servicing Temperature, Intermittent		- °F	626	626	626	626	662
Long Term		- °F	536	536	536	536	572
Specific Heat		-	-	-	-	-	-
Thermal Conductivity		-	-	-	-	-	-
Vicat Softening Point		-	-	-	-	-	-
Melting Point		-	-	-	-	-	-
Flammability		-	-	-	-	-	-
ELECTRICAL	Surface Resistivity	-	-	-	-	-	-
	Volume Resistivity	D257 ohm-cm	-	-	-	10 ¹⁸	10 ¹⁸
	Dielectric Strength	D149 V/mil	-	-	-	500	500
	Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150 -	-	-	-	-	-
	@ 1 MHz	-	-	-	-	-	-
	@ 20 GHz	-	-	-	-	-	-
	@ 30 GHz	-	-	-	-	-	-
Dissipation Factor, @ 60 HZ, 73°F	-	-	-	-	-	-	

This information is only to assist and advise you on current technical knowledge and is given without obligation or liability. All trade and patent rights should be observed. All rights reserved. Data obtained from extruded shapes material.

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"

Primary Specification (Typical)

Shapes Specification (Typical)

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



ENSINGER-HYDE

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