

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 it's 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.

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

TYPICAL PROPERTY VALUES

	PROPERTIES	ASTM Test Method	Units	Sintimid™ V Unfilled	Sintimid™ V 15% graphite	Sintimid™ V 40% graphite	Sintimid™ V-HP high-purity	Sintimid™ V-HPHT high purity high temp
PHYSICAL	Density Specific Gravity Water Absorption, @ 24 hours, 73°F @ Saturation, 73°F	D792 D792 D570	lbs/cu in - % -	0.0484 1.34 0.62	0.0509 1.41 0.65	0.0563 1.56 0.87	0.0484 1.34 0.62	0.0488 1.35 1.86
MECHANICAL	Tensile Strength @ Yield, 73°F Tensile Modulus Elongation @ Break, 73°F Flexural Strength, 73°F Flexural Modulus, 73°F Compressive Strength Izod Impact Strength, Notched 73°F Rockwell Hardness, 73°F Shure Hardness Wear Factor Against Steel, 40 psi, 50 fpm Static Coefficient of Friction Dynamic Coefficient of Friction, 40 psi, 50 fpm	D638	psi psi % psi psi - ft-lbs/in M scale - - -	20,300 - 9 29,700 580,000 - 0.6 120 - - -	13,100 - 3.5 19,400 580,000 - 0.4 115 - - -	9,400 - 2.2 14,500 580,000 - 0.3 1111 - - -	20,300 - 9 29,700 580,000 - 0.6 120 - - -	16,800 - 9 25,200 580,000 - 0.82 125 - - -
THERMAL	Heat Deflection Temperature @ 66 psi @ 264 psi Coefficient of Linear Thermal Expansion Maximum Servicing Temperature, Intermittent Long Term Specific Heat Thermal Conductivity Vicate Softening Point Melting Point Flammability	D648 D648 D696 - - - - - -	°F °F in/in/°F °F - - - -	600 28 x 10° 626 536 - - -	>600 18 x 10° 626 536 - - -	>600 17 x 10° 626 536 - - -	600 28 x 10 ⁻⁶ 626 536 - - -	- 695 27 x 10° 662 572 - - - -
ELECTRICAL	Surface Resistivity Volume Resistivity Dielectric Strength Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D257 D149 D150 - - -	ohm-cm V/mil - - - - -	-	- - - - - -	- - - - -	- 10 ¹⁸ 500 - - - - -	- 10 ¹⁸ 500

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.



DISTRIBUTED BY

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DS120/0604