

TIVAR® 1000
(Ultra High Molecular Weight Polyethylene, UHMW-PE)

TIVAR® 1000 sets the standard for engineered polymers with a unique combination of wear and corrosion resistance, low friction surface and impact strength. TIVAR 1000 is resistant to chemical attack and moisture absorption, and retains key physical properties to -30 C.

- Reduces noise
- Self-lubricating
- No moisture absorption
- Non-toxic, low-friction surface
- Meets ASTM-D-4020-81 of 4.0 to 5.4- million molecular weight
- Meets FDA and USDA guidelines; 3-A Dairy-approved (natural)
- Chemical-, corrosion- and wear-resistant

An excellent general-purpose material, TIVAR 1000 (natural) is a cost-effective solution for food handling problems, and meets FDA, USDA and 3-A Dairy guidelines for food processing and handling.

Applications:

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| • Augers | • Bearings | • Chain sprockets | • Chain guides | • Chain tensioners |
| • Chute liners | • Deboning tables | • Filter press plates | • Flight wearshoes | • Flights |
| • Gears | • Grain strippers | • Guide rails and rollers | • Hopper liners | • Idlers |
| • Mixer bushings | • Mixer paddles | • Plow blades | • Roller chain | • Scraper blades |
| • Spiral freezers | • Spreaders | • Sprockets | • Trough liners | • Vent and filter plates |
| • Wearstrips | | | | |

Property	Test Method	Units	TIVAR® 1000
Physical			
Density	ASTM D-792	lbs/ft ³	58.01
Water Absorption	ASTM D-570	%	nil
Mechanical			
Yield Point	ASTM D-638	psi	3,050
Elongation at Yield	A STM D-638	%	15
Tensile Break	ASTM D-638	psi	5,800
Elongation at Break	ASTM D-638	%	250
Tensile Modulus	ASTM D-638	psi	120,000
Flexural Modulus	ASTM D-790	psi	110,000
Izod Impact	ASTM D-4020	ft-lbs/in ²	34
Tensile Impact	DIN 53448	ft-lbs/in ²	1,050
Sand Wheel Wear	ASTM G-65	AR-01 Steel=100	90
Hardness	ASTM D-2240	Shore D	68
Static Friction	ASTM D-1894		0.15
Dynamic Friction	ASTM D-1894		0.12
Compressive Modulus	ASTM D-695	psi	77,750
Compressive Deformation	ASTM D-621	% at 1000 psi	6-8
Thermal			
Coefficient of Thermal Exp.	ASTM D-696	in/in/°F	0.00011
Melt Point	ASTM D-3417	°F	278-289
Maximum Operating Temp.		°F	180
Electrical			
Volume Resistivity	ASTM D-257	ohm-cm	>10 ¹⁵
Surface Resistivity	ASTM D-257	ohm	>10 ¹⁵

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.