E. Jordan Brookes
Engineered Metals and Plastics
Quality Plastics Since 1936

TIVAR UHMW-PE

Characteristics

* Meets FDA and USDA guidelines; 3-A Dairy approved (natural)
* Self-lubricating
* No Moisture Absorption
* Non-toxic, Low-friction Surface
* Chemical, Corrosion, and Wear Resistant

Description

Tivar (also known as UHMW-PE) is an excellent general purpose material. It offers a unique combination of wear and corrosion resistance, low surface friction, and impact strength. Tivar is resistant to chemical attack and moisture absorption while retaining key physical properties to -30 degrees Celsius. Often used as a cost effective solution for food handling problems, it meets FDA, USDA, and 3-A Dairy guidelines for food processing and handling. It's self lubricating properties make it an ideal material for bushing, bearing, and wear strip conveyor applications.

Tivar comes in natural, black, and custom colors. It is available in a variety of sizes of plate, rod, and tube.

Forms Available

ROD	.062 to 12.00 " diameter, Lengths to 12 feet
BUSHING	1.97" - 13.5" OD, .393" - 11.8" ID
PLATE	.062" to 6.000" thick, Widths to 48", Lengths to 10 feet
COLOR(s)	White and Black are standard, Multiple other colors available on request

Typical Property Values

		Virgin Natural	Virgin Black	UV Stabilized Black
MECHANICAL @ 73ºF				
Specific Gravity				
Tensile Strength	psi	5,800	5,800	5,800
Tensile Modulus of Elasticity	psi	100,000	110,000	116,000
Tensile Elongation (at Break)	%	300	250	300
Flexural Strength	psi	3,500	3,500	3,800
Flexural Modulus of Elasticity	psi	110,000	120,000	116,000
Shear Strength	psi	4,800	4,800	4,800
Compressive Strength, 10% Deformation	psi	3,000	3,000	3,300
Compressive Modulus of Elasticity	psi	80,000	80,000	100,000
Rockwell Hardness	M Scale	66	67	66
Izod Impact Strength, Notched	ft-lbs/in. of notch			
Coefficient of Friction, Dynamic (Dry vs. Steel)		0.12	0.12	0.12
Limiting PV (4 :1 Safety Factor Applied)	$ft.lbs/in.^2$ min	2,000	2,000	2,000
Wear Factor	in^3-min/ft.lbs. hr.	111×10^{-10}		
Water Absorption 24 hrs	% by wt.	0.10		
THERMAL				
Coefficient of Linear Expansion (-40ºF to 300ºF)	in./in./ºF			
Heat Deflection Temperature @264 psi	ºF			
Melting Point (Crystalline)	ºF	275	275	275
Continuous Service Temperature in Air	ºF	116	116	116
Thermal Conductivity	ºF	2.84		
ELECTRICAL				
Dielectric Strength, Short Term	Volts/mil	900		
Surface Resistivity	Ohms/Sq.			
Dielectric Constant	1 MHz	2.30		
Dissipation Factor	1 MHz	0.0005		

(Properties listed above are provided for reference only, they should not be used for design specifications or quality control , TIVAR is a registered Trademark of Quadrant EPP)