

Data Sheet
TIVAR® MD
FDA Metal-Detectable UHMW-PE

Property	Units	Test Method	Typical Average Values
Mechanical			
Specific Gravity, 73° F	-	ASTM D792	0.954
Tensile Strength, 73° F	psi	ASTM D638	6,100
Tensile Modulus of Elasticity, 73° F	psi	ASTM D638	100,000
Tensile Elongation (at break), 73° F	%	ASTM D638	380
Flexural Strength, 73° F	psi	ASTM D790	4,200
Flexural Modulus of Elasticity, 73° F	psi	ASTM D790	107,600
Shear Strength, 73° F	psi	ASTM D732	-
Compressive Strength, 10% Deformation, 73° F	psi	ASTM D695	3,000
Compressive Modulus of Elasticity, 73° F	psi	ASTM D695	90,000
Hardness, Rockwell, Scale as noted, 73° F	-	ASTM D785	-
Hardness, Durometer, Shore "D" Scale, 73° F	-	ASTM D2240	D64
Izod Impact (notched), 73° F	ft.lb./in.	ASTM D256 Type "A"	No Break
Izod Impact (double notch), 73° F	ft.lb./in. of notch	ASTM D4060	-
Coefficient of Friction (Dry vs. Steel) Dynamic	-	QTM 55007	0.13
Limiting PV (with 4:1 safety factor applied)	ft.lbs.in. ² min.	QTM 55007	2,000
Sand Slurry Abrasion	1018 Steel = 100.	ASTM D4020	11
Thermal			
Coefficient of Linear Thermal Expansion (-40°F to 300°F)	in./in./°F	ASTM E-831 (TMA)	1.1 x 10 ⁻⁴
Heat Deflection Temperature 264 psi	°F	ASTM D648	116
Tg-Glass Transition (amorphous)	°F	ASTM D3418	-
Melting Point (crystalline) peak	°F	ASTM D3418	275
Continuous Service Temperature in Air (Max.) ⁽¹⁾	°F	-	180
Thermal Conductivity	BTU in./(hr.ft. ² °F)	ASTM E 1530-11	-

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Electrical			
Dielectric Strength, Short Term	Volts/mil	ASTM D149	-
Surface Resistivity	ohms/square	EOS/ESD S11.11	$\geq 10^{14}$
Dielectric Constant, 10^6 Hz	-	ASTM D150	-
Dissipation Factor, 10^6 Hz	-	ASTM D150	-
Flammability @ 3.1 mm (1/8 in.) (3)	-	UL94	HB
Miscellaneous			
Water Absorption Immersion, 24 Hours	% by wt.	ASTM D570 ⁽²⁾	<0.01
Water Absorption Immersion, Saturation	% by wt.	ASTM D570 ⁽²⁾	<0.01

- (1) Data represent Quadrant's estimated maximum long-term service temperature based on practical field experience.
 (2) Specimens: 1/8" thick x 2" diameter or square.
 (3) **Estimated rating based on available data.** The UL 94 Test is a laboratory test and does not relate to actual fire hazard. Contact Quadrant for specific UL "Yellow Card" recognition number.