

Quadrant EPP TIVAR® 1000 Natural Virgin

Ultra High Molecular Weight Polyethylene

Quadrant Engineering Plastic Products

Message:

Quadrant EPP TIVAR® 1000 Natural Virgin is an Ultra High Molecular Weight Polyethylene product. It is available in North America. Typical application: Food Contact Applications.
Characteristics include:
Flame Rated
Chemical Resistant
High Molecular Weight

General Information	
Features	Acid Resistant
	Alcohol Resistant
	Alkali Resistant
	Hydrocarbon Resistant
	Machinable
	Solvent Resistant
	Ultra High Molecular Weight

Agency Ratings	FDA Unspecified Rating
Appearance	Natural Color
Forms	Preformed Parts
	Profiles
	Rod
	Sheet
	Tubing

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.930	g/cm ³	ASTM D792
Water Absorption			ASTM D570
24 hr	< 0.010	%	
Saturation	< 0.010	%	

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	66		ASTM D2240

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	689	MPa	ASTM D638
Tensile Strength (Ultimate)	40.0	MPa	ASTM D638
Tensile Elongation (Break)	300	%	ASTM D638
Flexural Modulus	758	MPa	ASTM D790
Flexural Strength (Yield)	24.1	MPa	ASTM D790
Compressive Modulus	552	MPa	ASTM D695

Compressive Strength (10% Strain,23°C)	20.7	MPa	ASTM D695
Shear Strength	33.1	MPa	ASTM D732
Coefficient of Friction (vs. Steel - Static)	0.12		Internal Method
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	No Break		ASTM D256A
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	46.7	°C	ASTM D648
Maximum Use Temperature - Long Term, Air	82	°C	
Limiting Pressure Velocity ¹	0.0701	MPa·m/s	Internal Method
Peak Crystallization Temperature (DSC)	135	°C	ASTM D3418
CLTE - Flow ² (-40 to 149°C)	2.2E-4	cm/cm/°C	ASTM E831
Thermal Conductivity	0.41	W/m/K	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	ASTM D257
Dielectric Strength ³	91	kV/mm	ASTM D149
Dielectric Constant (1 MHz)	2.30		ASTM D150
Dissipation Factor (1 MHz)	5.0E-4		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Flame Rating (3.18 mm, Estimated Rating)	HB		UL 94
NOTE			
1.	4:1 safety factor		
2.	68°F		
3.	Method A (Short-Time)		

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