

# TIVAR® ESd

## Quadrant EPP - Electro Static Dissipative UHMW Polyethylene (ASTM Data Sheet)

Physical Properties	Metric	English	Comments
Specific Gravity	0.940 g/cc	0.940 g/cc	ASTM D792
Water Absorption	<= 0.010 %	<= 0.010 %	Immersion, 24 hr; ASTM D570(2)
Water Absorption at Saturation	<= 0.010 %	<= 0.010 %	Immersion; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Shore D	66	66	ASTM D2240
Tensile Strength	40.0 MPa	5,800 psi	ASTM D638
Tensile Strength at 65°C (150°F)	2.76 MPa	400 psi	ASTM D638
Elongation at Break	300 %	300 %	ASTM D638
Tensile Modulus	0.600 GPa	87.0 ksi	ASTM D638
Flexural Strength	25.5 MPa	3,700 psi	ASTM D790
Flexural Modulus	0.600 GPa	87.0 ksi	ASTM D790
Compressive Strength	22.8 MPa	3,300 psi	10% Def.; ASTM D695
Compressive Modulus	0.689 GPa	100.0 ksi	ASTM D695
Shear Strength	33.1 MPa	4,800 psi	ASTM D732
Izod Impact, Notched	No Break	No Break	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.120	0.120	Dry vs Steel; QTM 55007
Sand Slurry	10.0	10.0	1018 Steel = 100
Limiting Pressure Velocity	0.105 MPa-m/sec	3,000 psi-ft/min	4:1 Safety Factor; QTM 55007
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	1e+05 - 1e+9 ohm	1e+05 - 1e+9 ohm	ASTM D257
Thermal Properties	Metric	English	Comments
CTE, Linear	198 µm/m-°C <small>@Temperature -40.0 - 149 oC</small>	110.0 µin/in-°F <small>@Temperature -40.0 - 300 oF</small>	ASTM E831
Melting Point	135 °C	275 °F	Crystalline, Peak; ASTM D3418
Max Service Temperature, Air	82.2 °C	180 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	46.7 °C	116 °F	ASTM D648
Flammability, UL94	HB	HB	1/8 inch (Estimated Rating)
Compliance Properties	Metric	English	Comments
3-A Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
USP Class VI	No	No	
Miscellaneous Properties	Metric	English	Comments
Data Sheet Region	Americas	Americas	
Targeted Usage	Load + Bearing	Load + Bearing	
Descriptive Properties	Metric	English	Comments
Machinability	---	3	1-10, 1 = Easiest to Machine

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations should contact Alro Plastics and/or Quadrant EPP directly. This data sheet is for reference only in helping if a material may be suitable for an application. Proper material testing is the only way to know for sure and is the recommended way to go when implementing a new material for an application. Material samples may also be available for testing, please contact Alro Plastics for samples.



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