



## HDPE (Quadrant EPP)

### High Density Polyethylene

Physical Properties	Metric	English	Comments
Specific Gravity	0.94 g/cc	0.034 lb/in <sup>3</sup>	ASTM D792
Water Absorption	Max 0.01 %	Max 0.01 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	Max 0.01 %	Max 0.01 %	Immersion; ASTM D570(2)
<b>Mechanical Properties</b>			
Hardness, Shore D	67	67	ASTM D2240
Tensile Strength, Ultimate	32.4 MPa	4700 psi	ASTM D638
Elongation at Break	200 %	200 %	ASTM D638
Tensile Modulus	0.565 GPa	82 ksi	ASTM D638
Flexural Modulus	0.607 GPa	88 ksi	ASTM D790
Flexural Yield Strength	23.4 MPa	3400 psi	ASTM D790
Compressive Strength	19.3 MPa	2800 psi	10% Def., 73°F; ASTM D695
Compressive Modulus	0.452 GPa	65.5 ksi	ASTM D695
Shear Strength	62.1 MPa	9000 psi	ASTM D732
Coefficient of Friction	0.08	0.08	Dry vs. Steel; QTM 55007
Limiting Pressure Velocity	0.0701 MPa-m/sec	2000 psi-ft/min	QTM 55007
Abrasion	130	130	Sand Wheel; TIVAR® 1000 = 100; ASTM G-65
Abrasion	15	15	Sand Slurry; 1018 Steel = 100; ASTM D4020
Izod Impact Resistance	73.5 kJ/m <sup>2</sup>	35 ft-lb/in <sup>2</sup>	ASTM D4020
<b>Electrical Properties</b>			
Surface Resistivity per Square	1e+013 - 1e+015 ohm	1e+013 - 1e+015 ohm	EOS/ESD S11.11
Dielectric Constant	2.3	2.3	1 MHz; ASTM D150
Dissipation Factor	Max 0.005	Max 0.005	1 MHz; ASTM D150
<b>Thermal Properties</b>			
CTE, linear 68°F	234 µm/m-°C	130 µin/in-°F	(-40°F to 300°F); ASTM E831
Melting Point	135 °C	275 °F	Crystalline Peak; ASTM D3418
Maximum Service Temperature, Air	82.2 °C	180 °F	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	46.7 °C	116 °F	ASTM D648
Flammability, UL94 (Estimated Rating)	HB	HB	3.1 mm (1/8 in.)

All statements, technical information and recommendations contained in this database are presented in good faith, based upon tests believed to be reliable and practical field experience. The reader is cautioned, however, that Quadrant EPP and Automation Creations, Inc. cannot guarantee the accuracy or completeness of this information, and it is the customer's responsibility to determine the suitability of Quadrant EPP's products in any given application.