

## Quadrant EPP HDPE - High Density Polyethylene

<b>Physical Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
Specific Gravity	0.96 g/cc	0.0347 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	70	70	ASTM D2240
Tensile Strength, Ultimate	31.7 MPa	4600 psi	ASTM D638
Elongation at Break	400 %	400 %	ASTM D638
Tensile Modulus	1.38 GPa	200 ksi	ASTM D638
Flexural Modulus	1.2 GPa	174 ksi	ASTM D790
Flexural Yield Strength	31.7 MPa	4600 psi	ASTM D790
Compressive Strength	31.7 MPa	4600 psi	10% Def., 73°F; ASTM D695
Compressive Modulus	0.689 GPa	100 ksi	ASTM D695
Coefficient of Friction	0.2	0.2	Dry vs. Steel: QTM55007
Izod Impact, Notched	0.694 J/cm	1.3 ft-lb/in	ASTM D256 Type A
<b>Electrical Properties</b>			
Surface Resistivity per Square	Min 1e+015 ohm	Min 1e+015 ohm	ASTM D257
<b>Thermal Properties</b>			
CTE, linear 68°F	110 µm/m-°C	61 µin/in-°F	(-40°F to 300°F); ASTM E831
Melting Point	127 °C	260 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	82.2 °C	180 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	80 °C	176 °F	ASTM D648
Flammability, UL94 (Estimated Rating)	HB	HB	1/8 inch
<b>Qualitative Processing Properties</b>			
Compliance - FDA	Compliant		
Machinability	3		1-10, 1=Easier to Machine
Service in Alcohols	Acceptable Service		
Service in Aliphatic Hydrocarbons	Unacceptable		
Service in Aromatic Hydrocarbons	Unacceptable		
Service in Chlorinated Solvents	Unacceptable		
Service in Ethers	Unacceptable		
Service in Ketones	Unacceptable		
Service in Strong Acids	Acceptable Service		
Service in Strong Alkalies	Acceptable Service		
Service in Sunlight	Limited Service		
Service in Weak Acids	Acceptable Service		
Service in Weak Alkalies	Acceptable Service		

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