

High Density Polyethylene									
Physical Properties		Metric		English		Comments			
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			
Water Absorption at Saturation	Max 0.01 %		Max 0.01 %		Immersion; ASTM D570(2)				D570(2)
Mechanical Properties									
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			
Electrical Properties									
Surface Resistivity per Square		Min 1e+015 ohm		Min 1e+015 ohm		ASTM D257			
Thermal Properties									
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, 82.2 °C		180 °F			Long Term				
Deflection Temp, 80 °C		176 °F			ASTM D648				
Flammability, UL94 (Estimated FHB)			HB			1/8 inch			
Qualitative Processing Properties									
Compliance - FDA		Compliant							
Machinability			3 1-10,		1=Easier to Machine				
Service in Alcohols		Acceptable							
Service in Aliphatic Hydrocarbons	Unacceptable					Service			
Service in Aromatic Hydrocarbons	Unacceptable								
Service in Chlorinated Solvents	Unacceptable								
Service in Ethers		Unacceptable							
Service in Ketones		Unacceptable							
Service in Strong Acids	Acceptable								
Service in Strong Alkalies	Acceptable					Service			
Service in Sunlight		Limited Service							
Service in Weak Acids		Acceptable							
Service in Weak Alkalies	Acceptable					Service			
						Service			
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