

Mitsubishi Chemical Advanced Materials Proteus® LDPE - Low Density Polyethylene (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polyethylene (PE); Low Density (LDPE)

Material Notes: Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	0.920 g/cc	0.920 g/cc	ASTM D792
Water Absorption	<= 0.010 %	<= 0.010 %	Immersion, 24hr; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Shore D	54	54	ASTM D2240
Tensile Strength	11.7 MPa	1700 psi	ASTM D638
Tensile Strength at 65°C (150°F)	2.76 MPa	400 psi	ASTM D638
Tensile Strength, Yield	10.3 MPa	1500 psi	ASTM D638
Elongation at Break	400 %	400 %	ASTM D638
Elongation at Yield	100 %	100 %	ASTM D638
Tensile Modulus	0.393 GPa	57.0 ksi	ASTM D638
Flexural Modulus	0.200 GPa	29.0 ksi	ASTM D790
Izod Impact, Notched	NB	NB	ASTM D256 Type A
Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D257
Surface Resistivity per Square	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ASTM D257
Thermal Properties	Metric	English	Comments
Melting Point	110 °C	230 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	71.1 °C	160 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	71.1 °C	160 °F	ASTM D648
Flammability, UL94	HB @Thickness 3.17 mm	HB @Thickness 0.125 in	Estimated Rating
Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	Yes	Yes	
NSF	No	No	
USDA	Yes	Yes	
USP Class VI	No	No	
Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Acceptable	Acceptable	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Unacceptable	Unacceptable	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Unacceptable	Unacceptable	
Hydrocarbons - Aromatic	Unacceptable	Unacceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Unacceptable	Unacceptable	
Descriptive Properties			
Machinability		3	1-10, 1=Easier to Machine