

Mitsubishi Chemical Advanced Materials Proteus® PP, ProKnob Finish Natural Homopolymer Polypropylene (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polypropylene (PP); Polypropylene, Molded

- Material Notes:**
- 1 High impact resistance strength
 - 1 Better resistance to cracking at low temperatures than Homopolymer Polypropylene
 - 1 More pliable than homopolymer
 - 1 Meets food handling guidelines
 - 1 Chemical- and corrosion-resistant
 - 1 No moisture absorption
 - 1 FDA and 3-A Dairy Compliant Appropriate for applications to 180°F (82°C)
 - 1 Resists most acids, alkalis and solvents
 - 1 Meets FDA 21CFR 177.1520
 - 1 Thermoforming performance
 - 1 USDA, NSF and 3-A Dairy Compliant (natural color only)

Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	0.910 g/cc	0.910 g/cc	ASTM D792
Water Absorption	<= 0.010 %	<= 0.010 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	<= 0.010 %	<= 0.010 %	Immersion; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Shore D	78	78	ASTM D2240
Tensile Strength	33.1 MPa	4800 psi	ASTM D638
Tensile Strength at 65°C (150°F)	2.76 MPa	400 psi	ASTM D638
Elongation at Break	11 %	11 %	ASTM D638
Tensile Modulus	1.31 GPa	190 ksi	ASTM D638
Flexural Strength	33.1 MPa	4800 psi	ASTM D790
Flexural Modulus	1.34 GPa	195 ksi	ASTM D790
Compressive Strength	34.5 MPa	5000 psi	10% Def.; ASTM D695
Compressive Modulus	1.38 GPa	200 ksi	ASTM D695
Izod Impact, Notched	0.641 J/cm	1.20 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.25	0.25	Dry vs. Steel; QTM55007
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ASTM D257
Thermal Properties	Metric	English	Comments
Melting Point	164 °C	327 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	82.2 °C	180 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	98.9 °C	210 °F	ASTM D648
Flammability, UL94	HB @Thickness 3.17 mm	HB @Thickness 0.125 in	Estimated Rating
Compliance Properties	Metric	English	Comments
3A-Dairy	Yes	Yes	
Canada AG	No	No	
FDA	Yes	Yes	
NSF	Yes	Yes	
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
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