

TECHNICAL DATA SHEET

Polypropylene

(PP)

Polypropylene offers a good balance of chemical, thermal and electrical properties with moderate strength. It has a good strength to weight ratio and due to its hard, high gloss surface, polypropylene is ideally suited to environments where there is concern for bacteria build up that can interfere with flow. Polypropylene can be heat formed, shaped and welded to fabricate ducts, hoods and much more. Polypropylene has excellent corrosion resistance to a wide range of items. Polypropylene is not UV stabilized but is USDA approved and meets FDA standards.

TYPICAL PROPERTIES of POLYPROPYLENE				
ASTM or UL test	Property	Homopolymer	Co-Polymer	Flame Retardant
PHYSICAL				
D792	Density (lb/in ³) (g/cm ³)	0.033 0.905	0.033 0.897	0.035 0.988
D570	Water Absorption, 24 hrs (%)	<0.01	0.01	0.02
MECHANICAL				
D638	Tensile Strength (psi)	4,800	4,800	4,300
D638	Tensile Modulus (psi)	195,000	-	-
D638	Tensile Elongation at Yield (%)	12	23	28
D790	Flexural Strength (psi)	7,000	5,400	-
D790	Flexural Modulus (psi)	180,000	160,000	145,000
D695	Compressive Strength (psi)	7,000	6,000	-
D695	Compressive Modulus (psi)	-	-	-
D785	Hardness, Rockwell R	92	80	-
D256	IZOD Notched Impact (ft-lb/in)	1.9	7.5	0.65
THERMAL				
D696	Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	6.2	6.6	-
D648	Heat Deflection Temp (°F / °C) at 66 psi at 264 psi	210 / 99 125 / 52	173 / 78 110 / 43	106 / 41 57 / 14
D3418	Melting Temperature (°F / °C)	327 / 164	327 / 164	327 / 164
-	Max Operating Temp (°F / °C)	180 / 82	170 / 77	180 / 82
C177	Thermal Conductivity (BTU-in/ft ² -hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C)	0.76-0.81 2.6-2.8	- -	- -
UL94	Flammability Rating	HB	n.r.	V-0
ELECTRICAL				
D149	Dielectric Strength (V/mil) short time, 1/8" thick	500-660	475	500-650
D150	Dielectric Constant at 1 kHz	2.25	2.2-2.36	2.3
D150	Dissipation Factor at 1 kHz	0.0005-0.0018	0.0017	-
D257	Volume Resistivity (ohm-cm) at 50% RH	8.5 x 10 ¹⁴	2 x 10 ¹⁶	10 ¹⁵
D495	Arc Resistance (sec)	160	100	-

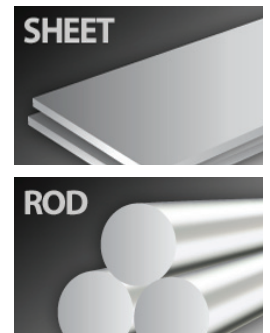
Benefits

- Abrasion resistant
- Chemical resistant
- Impact resistant
- Moisture resistant
- Stress crack resistant
- Excellent dielectric properties
- Able to retain stiffness and flexibility
- High tensile

Applications

- Food handling
- Aircraft
- Aerospace
- Defense
- Alternative energy
- Medical
- Industrial

SHAPES AVAILABLE



SEE NEXT PAGE FOR ADDITIONAL INFORMATION

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets.
All values at 73°F (23°C) unless otherwise noted.



TYPICAL PROPERTIES of HEAT-STABILIZED POLYPROPYLENE

ASTM or UL test	Property	Standard Polypro (copolymer)	HS Polypro <heat-stabilized>
PHYSICAL			
D792	Density (lb/in ³) (g/cm ³)	0.033 0.90	0.033 0.92
D570	Water Absorption, 24 hrs (%)	0.100	<0.1
MECHANICAL			
D638	Tensile Strength @ yield (psi)	5,200	5,100
D638	Tensile Modulus (psi)	240,000	-
D638	Tensile Elongation at Break (%)	600	12
D790	Flexural Strength (psi)	7,000	-
D790	Flexural Modulus (psi)	120,000	220,000
D695	Compressive Strength (psi)	6,000	-
D695	Compressive Modulus (psi)	-	-
D785	Hardness, Rockwell R	-	100
D256	IZOD Notched Impact (ft-lb/in)	0.7	-
THERMAL			
D696	Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	8.1	4.6
D648	Heat Deflection Temp (°F / °C) at 66 psi at 264 psi	210 / 99 130 / 54	- 186 / 86
D3418	Melting Temperature (°F / °C)	320 / 160	325 / 163
-	Max Operating Temp (°F / °C)	180 / 82	212 / 100
C177	Thermal Conductivity (BTU-in/ft ² -hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C)	2.8 9.6	- -
UL94	Flammability Rating	HB	HB
ELECTRICAL			
D149	Dielectric Strength (V/mil) short time, 1/8" thick	500-660	-
D150	Dielectric Constant at 1 kHz	2.25	-
D150	Dissipation Factor at 1 kHz	0.0005-0.0018	-
D257	Volume Resistivity (ohm-cm) at 50% RH	> 10 ¹⁴	> 10 ¹⁴
D495	Arc Resistance (sec)	160	-

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