

# Polypropylene (PP)

## Homopolymer

### KEY FEATURES

- Resists Most Alkalis and Acids
- Resistant to Stress Cracking
- Low Moisture Absorption
- Resistant to Organic Solvents
- Lightweight

### DESCRIPTION

Polypropylene is a lightweight heat-resistant, semi-rigid material ideally suited for use in applications at elevated temperature. In steam applications, its low moisture absorption rate and resistance to staining makes it an excellent choice. High tensile strength coupled with impact resistance and high compressive strength allow it to be used in a multitude of structural applications. Polypropylene can easily be machined with wood or metal working tools into intricate shapes. Pieces can be joined by numerous welding techniques including both fusion and butt welding along with many other methods.

## TYPICAL PROPERTY VALUES

Physical	Properties	Condition	Units	Value	ASTM Test
	Density		g/cm <sup>3</sup>	0.03	D792
	Chemical Designation			PP-H	
	Filler				

Mechanical	Properties	Condition	Units	Value	ASTM Test
	Tensile Modulus	@ 73 °F	PSI	195,000	D638
	Tensile Strength	@ 73 °F	PSI	4,800	D638
	Shear Strength	@ 73 °F	PSI		
	Elongation @ Yld	@ 73 °F	%		
	Tensile Elongation @ Brk	@ 73 °F	%	12	D638
	Compressive Strength	@ 73 °F, 10% strain	PSI	7,000	D695
	Flexural Modulus	@ 73 °F	PSI	180,000	D790
	Flexural Strength	@ 73 °F	PSI	7,000	D790
	Compressive Modulus	@ 73 °F	PSI		
	Izod (Charpy) Impact Strength	@ 73 °F	ft-lbs/in	1.9	D256
	Rockwell Hardness	@ 73 °F	R Scale	92	D785
	Coefficient of Friction	Static			
	Wear (K) Factor		in <sup>3</sup> -min/ft-lbs-hr		
Limiting PV		psi-fpm			

Thermal	Properties	Condition	Units	Value	ASTM Test
	Heat Deflection Temperature	@ 66 PSI	°F		
	Service Temperature	Long Term	°F	180	D648
	Heat Deflection Temperature	@ 264 PSI	°F	125	
	Service Temperature	Intermittent	°F		
	Thermal Expansion (CLTE)		in/in/°F	6.2*10 <sup>-5</sup>	D696
	Specific Heat		BTU/lb-°F		
Thermal Conductivity		BTU-in/hr-ft <sup>2</sup> -°F	.76 - .81		

Electrical	Properties	Condition	Units	Value	ASTM Test
	Surface Resistivity		ohms/square		
	Volume Resistivity		ohm-cm		
	Dielectric Strength	@ 60 Hz, 73 °F	V/mil	500 - 660	D149
Dissipation Factor	@ 60 Hz, 73 °F				

Other	Properties	Condition	Units	Value	ASTM Test
	Moisture Absorption	@ 24 hrs, 73 °F	%	<0.01	D570
	Moisture Absorption	@ Saturation, 73 °F	%		
	Flammability	UL 94			
	Food Grade				
Relative Cost					

• The data stated above are typical values intended for reference and comparison purposes only.  
• The data should not be used as a basis for design specifications or quality control.

• The information is provided as a guide to the best of our knowledge and given without obligation or liability.  
• Testing under individual application circumstances is recommended