

Technical Data Sheet

Polypropylene Homopolymer (PP-H)

Chemical Name(s): Polypropylene
Common Abbreviation(s): HDPE, PE100
Available Profiles: Sheet, Rod, Tube, Pipe

PP-H is a thermoplastic polymer known for its excellent chemical resistance, high rigidity, and low density. PP-H is widely used in industrial applications such as chemical tanks, banded containment solutions, and piping systems. It is particularly suitable for welding and fabrication due to its excellent durability and chemical resistance.

Benefits:

- High chemical resistance
- Excellent weldability
- High rigidity and stiffness
- Lightweight with low density
- Good impact strength, especially at higher temperatures

Common Applications:

- Chemical storage tanks
- Banded containment solutions
- Industrial piping systems
- Lining for tanks and pipes
- Wastewater treatment tanks

TYPICAL PROPERTIES of POLYPROPYLENE HOMOPOLYMER

	Property	Test Method	Value
Physical Properties	Density (g/cm ³)	ATSM D792	0.91
	Water Absorption (%)	ASTM D570	<0.01
Mechanical Properties	Tensile Strength at 23°C (MPa)	ASTM D638	30.5
	Tensile Modulus (MPa)	ASTM D638	1500
	Tensile Elongation at Break (%)	ASTM D638	10-15
	Flexural Strength (MPa)	ASTM D790	45
	Flexural Modulus (MPa)	ASTM D790	1700
	Compressive Strength (MPa)	ASTM D695	28
	Hardness (Shore D)	ASTM D785	D67
Thermal Properties	Impact Strength (kJ/m ²)	ASTM D256	5.5
	Coefficient of Linear Thermal Expansion (mm/mm/°C)	ASTM D696	1.5 x 10 ⁻⁴
	Heat Deflection Temperature at 0.45 MPa (°C)	ASTM D648	95
	Approx. Melting Temperature (°C)	ASTM D3418	165
Electrical Properties	Max Operating Temperature (°C)	-	100
	Dielectric Strength (kV/mm)	ASTM D149	23
	Dielectric Constant at 1 MHz	ASTM D150	2.2
	Dissipation Factor at 1 kHz	ASTM D150	0.0003
Flammability	Surface Resistivity (ohm/sq)	ASTM D257	>10 ¹²
	Arc Resistance (sec)	ASTM D495	180-210
Standards Compliance	Flammability Rating	UL94	HB
Environmental Considerations	Standards Compliance	FDA and USDA compliant for food processing ASTM D638, D790, D695, D256, D257 compliant	
	Environmental Considerations	Recyclability: HDPE is 100% recyclable and is commonly used in recycled materials like plastic lumber and containers. Environmental Impact: Minimal environmental impact under normal usage.	

