

Technical Data Sheet

Polyoxymethylene (POM) [Acetal]

Chemical Name(s): Polyoxymethylene, Acetal
Common Abbreviation(s): POM
Available Profiles: Sheet, Rod, Tube

Polyoxymethylene (POM) is a high-performance engineering thermoplastic known for its excellent mechanical properties, low friction, and high dimensional stability. It is widely used in precision parts requiring high stiffness, low friction, and excellent wear resistance. POM is available in both homopolymer (POM-H) and copolymer (POM-C) grades, with homopolymer offering slightly higher strength and rigidity.

Benefits:

- High mechanical strength and stiffness
- Excellent wear and abrasion resistance
- Low coefficient of friction
- Good dimensional stability
- High resistance to moisture, solvents, and chemicals
- Easy to machine and fabricate

Common Applications:

- Precision gears and bearings
- Bushings and wear strips
- Conveyor parts and guide rails
- Electrical insulators
- Automotive and mechanical components
- Medical device components

TYPICAL PROPERTIES of POLYOXYMETHYLENE (POM) [ACETAL]

	Property	Test Method	Value
Physical Properties	Density (g/cm ³)	ATSM D792	1.41
	Water Absorption (%)	ASTM D570	0.25
Mechanical Properties	Tensile Strength at 23°C (MPa)	ASTM D638	70
	Tensile Modulus (MPa)	ASTM D638	2900
	Tensile Elongation at Break (%)	ASTM D638	30
	Flexural Strength (MPa)	ASTM D790	100
	Flexural Modulus (MPa)	ASTM D790	2800
	Compressive Strength (MPa)	ASTM D695	90
	Hardness (Rockwell M)	ASTM D785	M88
	Impact Strength (kJ/m ²)	ASTM D256	8
Thermal Properties	Coefficient of Linear Thermal Expansion (mm/mm/°C)	ASTM D696	10 x 10 ⁻⁵
	Heat Deflection Temperature at 0.45 MPa (°C)	ASTM D648	105
	Approx. Melting Temperature (°C)	ASTM D3418	165
	Max Operating Temperature (°C)	-	100
Electrical Properties	Dielectric Strength (kV/mm)	ASTM D149	20
	Dielectric Constant at 1 MHz	ASTM D150	3.7
	Dissipation Factor at 1 kHz	ASTM D150	0.002
	Surface Resistivity (ohm/sq)	ASTM D257	>10 ¹⁴
	Arc Resistance (sec)	ASTM D495	120-160
Flammability	Flammability Rating	UL94	HB
Standards Compliance	FDA compliant for food contact ASTM D638, D790, D695, D257 compliant ISO 9988 compliant for POM materials		
Environmental Considerations	Environmental Impact: POM is durable and long-lasting, reducing the need for frequent replacement, and it has a low environmental footprint during usage.		

