

Material Datasheet — POM (Polyoxymethylene / Acetal)

Overview

POM (Acetal) is an engineering thermoplastic with excellent dimensional stability, low friction, high wear resistance, and good mechanical strength. It is ideal for precision gears, bushings, and structural components requiring tight tolerances. Copolymer and homopolymer grades available.

Key Features

- Excellent dimensional stability for tight-tolerance parts
- Low friction and high wear resistance
- Good fatigue resistance and creep performance
- High surface hardness and smooth finish
- ESD anti-static grades available
- Copolymer grade offers better chemical and thermal stability

Technical Properties

Property	Value	Unit	Test Standard
Density	1.41 - 1.43	g/cm³	ASTM D792
Tensile Strength	60 - 70	MPa	ASTM D638
Elongation at Break	15 - 40	%	ASTM D638
Flexural Modulus	2500 - 2900	MPa	ASTM D790
Hardness (Rockwell M)	78 - 90	Rockwell M	ASTM D785
HDT (1.8MPa)	100 - 110	°C	ASTM D648
Melting Point	165 - 175	°C	—
Continuous Use Temp	90 - 105	°C	—
Water Absorption (24h)	0.2 - 0.3	%	ASTM D570
Coefficient of Friction	0.15 - 0.35	—	—
Dielectric Strength	19 - 20	kV/mm	ASTM D149
Dimensional Stability	Excellent	—	—

Typical Applications

- Gears, pinions, worm wheels for precision mechanisms
- Bushings, bearings, slide guides, wear plates
- Automotive: fuel system components, door handles
- Consumer electronics: internal structural parts
- Conveyor systems: star wheels, chain guides, rollers
- Electrical: insulators, connector housings

Available Forms

- Sheets (extruded / molded): thickness 0.5mm - 200mm
- Rods: diameter 3mm - 300mm
- Tubes / hollow bars
- Custom CNC machined parts per CAD drawings