

# PLASTIC-CRAFT

# Acetal

Polyoxymethylene (POM) — Homopolymer & Copolymer Grades

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High-strength engineering thermoplastic with excellent stiffness, low friction, and superior dimensional stability. Available in homopolymer (Delrin®) and copolymer grades. Widely used as a metal replacement in precision mechanical components requiring low wear and fatigue resistance.

### STOCK AVAILABILITY

Plastic-Craft maintains extensive inventory across a wide range of standard and specialty sizes in sheets, rods, tubes, and custom profiles. Most orders ship from stock — contact us for immediate availability.

### KEY HIGHLIGHTS

- Excellent fatigue resistance
- Low coefficient of friction
- Outstanding dimensional stability
- High stiffness & spring recovery
- FDA compliant grades available

### COMMON APPLICATIONS

- Gears & bearings
- Bushings & rollers
- Conveyor components
- Pump & valve parts
- Electrical insulators
- Food processing equipment
- Automotive components

### GRADES AVAILABLE

- Homopolymer (Delrin®)
- Copolymer
- PTFE-filled (low friction)
- Glass-filled
- Colors (natural/black)

### MATERIAL PROPERTIES — TYPICAL VALUES

| PROPERTY                          | ASTM  | TYPICAL VALUE                   | UNITS                         |
|-----------------------------------|-------|---------------------------------|-------------------------------|
| PHYSICAL                          |       |                                 |                               |
| Specific Gravity                  | D792  | 1.41                            | —                             |
| Water Absorption, 24h             | D570  | 0.22                            | %                             |
| Melt Flow Rate                    | D1238 | 2.5 – 9.0                       | g/10 min                      |
| MECHANICAL                        |       |                                 |                               |
| Tensile Strength, Yield           | D638  | 10,000                          | psi (69 MPa)                  |
| Tensile Modulus                   | D638  | 420,000                         | psi (2,900 MPa)               |
| Elongation at Break               | D638  | 25 – 60                         | %                             |
| Flexural Strength                 | D790  | 13,000                          | psi (90 MPa)                  |
| Flexural Modulus                  | D790  | 420,000                         | psi (2,900 MPa)               |
| Compressive Strength              | D695  | 16,000                          | psi (110 MPa)                 |
| Impact, Izod Notched              | D256  | 1.0 – 1.5                       | ft-lb/in (53–80 J/m)          |
| Rockwell Hardness                 | D785  | M80 / R120                      | Scale M / R                   |
| FRICTION / WEAR                   |       |                                 |                               |
| Coefficient of Friction (Dynamic) | D3702 | 0.20                            | vs Steel                      |
| Coefficient of Friction (Static)  | D3702 | 0.35                            | vs Steel                      |
| Wear Factor K                     | D3702 | 1.3 × 10 <sup>-10</sup>         | in <sup>3</sup> -min/ft-lb-hr |
| THERMAL                           |       |                                 |                               |
| Heat Deflection @ 264 psi         | D648  | 205 – 257                       | °F (96–125°C)                 |
| Heat Deflection @ 66 psi          | D648  | 300 – 316                       | °F (149–158°C)                |
| Vicat Softening Temp.             | D1525 | 320                             | °F (160°C)                    |
| CTE (Linear)                      | D696  | 5.4 × 10 <sup>-5</sup> in/in/°F | in/in/°F                      |
| Thermal Conductivity              | C177  | 1.6                             | BTU-in/hr-ft²-°F              |
| Max Continuous Service            | —     | 185                             | °F (85°C)                     |
| ELECTRICAL                        |       |                                 |                               |
| Volume Resistivity                | D257  | > 10 <sup>14</sup>              | ohm-cm                        |
| Surface Resistivity               | D257  | > 10 <sup>13</sup>              | ohm/sq                        |
| Dielectric Strength               | D149  | 500                             | V/mil (20 kV/mm)              |
| Dielectric Constant, 60Hz         | D150  | 3.7                             | —                             |
| FLAMMABILITY                      |       |                                 |                               |
| Horizontal Burn Rate              | D635  | 1.1                             | in/min (28 mm/min)            |
| UL Flammability Rating            | UL 94 | HB                              | —                             |
| DURABILITY                        |       |                                 |                               |
| Abrasion Resistance (Taber)       | D1044 | 10 – 15                         | mg/1000 cycles                |
| Weathering / UV                   | G154  | Poor                            | Indoor use recommended        |

**PROCESSING / FABRICATION NOTES:** Excellent machinability with standard tooling | Not solvent bondable; use mechanical fastening or adhesives | Pre-dry 180°F / 2–3 hr before molding | Thermoforms at 330–350°F

**CHEMICAL RESISTANCE:** Resistant to most solvents, fuels, lubricants & neutral chemicals at room temperature. **AVOID:** strong acids (H<sub>2</sub>SO<sub>4</sub>, HCl), strong oxidizers, and phenols.

Typical values; not to be used as specifications. Actual values may vary by grade, manufacturer, and processing conditions. Contact Plastic-Craft for grade-specific data.