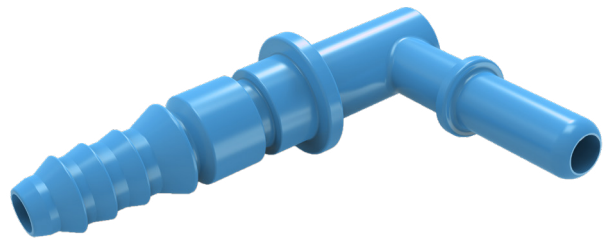


CNC MACHINING

ACETAL



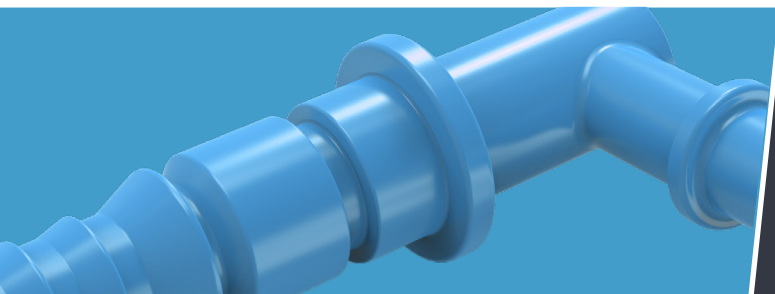
PRODUCT SPECIFICATIONS

PRODUCT DESCRIPTION

Acetal is an engineering thermoplastic used in precision parts requiring high stiffness, low friction and excellent dimensional stability.

APPLICATIONS

Typical applications include high-performance engineering components such as small gear wheels, eyeglass frames, ball bearings, ski bindings, fasteners, knife handles and lock systems. The material is widely used in the automotive and consumer electronics industry.



KEY PRODUCT BENEFITS

- Excellent dimensional stability
- Low friction

Physical properties (indicative values*)

Mechanical Properties	Value	Unit
Density	1.41	g/cm ³
Colour	black / white	
Modulus of elasticity	2800 - 3000	MPa
Tensile strength at yield	66 - 67	MPa
Elongation at yield	9 - 15	%
Elongation at break	32 - 40	%
Unnotched impact strength (Charpy)	150 - no break	kJ/m ²
Notched impact strength (Charpy)	6 - 8	kJ/m ²
Water absorption	0.05 - 0.45	%
Thermal Properties	Value	Unit
Melting temperature	165	°C
Service temperature long term	100	°C
Thermal conductivity	0.31 - 0.39	W/(K*m)
Flammability (UL94)	HB	

Electrical Properties	Value	Unit
Specific surface resistance	10exp(13) - 10exp(14)	Ω
Specific volume resistance	10exp(13) - 10exp(14)	$\Omega \cdot \text{cm}$
Dielectric strength	20 - 38	kV/mm

*from supplier data sheet

Note: 1g/cm³ = 1,000kg/m³; 1 Mpa = 1 N/mm²; 1 KV/mm = 1 MV/m

TOLERANCES

Typically, Protolabs can maintain a machining tolerance of +/- 0.1 mm.