

# ACETAL (POM-C & POM-H)

## ENGINEERING PLASTIC

### PRODUCT DESCRIPTION

Known as polyoxymethylene, ACETAL is a general purpose high quality engineering plastic which is available in a wide range of grades and forms.

### TECHNICAL DESCRIPTION

Our range of extruded ACETAL includes the following grades and options:

GRADE	MODIFICATION / PURPOSE
Acetal co-polymer (POM-C)	Colours, natural black, blue, others on application. For component identification.
Acetal co-polymer + 25% glass (POM-C GF25)	Reinforced with 25% glass fibre for increased strength and stiffness.
Acetal co-polymer (ESD60 & ESD90)	Additives to provide electrical conductivity or electro-static dissipation. To prevent uncontrolled discharge in sensitive electronic environments or in explosive atmospheres.
Acetal co-polymer - Medical Grade	Special production and testing, colour coded for component identification. Certified bio compatibility to USP Class VI and cytotoxicity to DIN EN ISO 10993-5
Acetal co-polymer - GLD160	Tribological modification for improved bearing and wear properties.
Acetal homo-polymer (POM-H)	Colours natural and black, for component identification

### PRODUCT AVAILABILITY \*

#### Extruded round bar

Natural colour made up to 600mm dia, black to 350mm. Modified grades – please call for a quotation.

#### Extruded Sheet/Plate

Natural and black colours made to 250mm thk and in a range of area formats. Modified grades – please call for a quotation.

#### Tubular Bar

Natural up to 350mm o/d.

#### Strip

Natural from 0.30mm thick

\* Sizes not stocked are available on relatively short delivery times. 1, 2 or 3 m lengths supplied or cut to customer requirements.



### TYPICAL APPLICATIONS

- Mechanical engineering
- Automotive, textile and foodstuff industries
- Gears, meter components, valve discs
- Electronics and electrical components
- Medical instrument components
- Relay and transformer housings
- Pump components

### KEY BENEFITS

- Wide range of grades available
- High impact load resistance
- High mechanical strength and stiffness
- Excellent machinability
- Good chemical resistance
- Very good dimensional stability
- High surface hardness
- Good sliding properties

### CUSTOMER BENEFITS

- Very good all-round engineering product
- Good wear life in bearing & gear applications
- Consistency of product
- Excellent stability when dimensional accuracy is important

### CHEMICAL RESISTANCE

Chemical resistance is similar when compared to Nylon 66 though slightly more prone to attack. ACETAL offers good resistance to common solvents, esters, lubricants, ketones and aqueous solutions of acids and alkalis. The material is not resistant to formic acid, concentrated mineral acids, phenols, cresols and alkalis or strong oxidising agents such as halogens.

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## ENGINEERING PLASTIC

### MECHANICAL PROPERTIES

	Natural or Black Un-Modified	Acetal-C +25% Glass	Acetal-C +PTFE	Acetal-C ESD60 conductive	Acetal-C ESD90 dissipative	
Density at 20°C	1.41	1.58	1.52	1.40	1.34	g/cm <sup>3</sup>
Tensile strength @ yield	67	65	50	40	42	MPa
Elongation @ break	30	3.0	16	30	20	%
Tensile modulus of elasticity	2800	4500	2500	1900	1800	MPa
Notched impact strength (Charpy)	6	4	4	5	5	kJ/m <sup>2</sup>
Ball indentation hardness	150	195	120	100	90	N/mm <sup>2</sup>
Hardness (Shore D)	81	85	80	-	76	Scale D

### ELECTRICAL PROPERTIES

Volume resistivity	10 <sup>13</sup>	-	-	10 <sup>3</sup>	10 <sup>9</sup> - 10 <sup>12</sup>	Ohm cm
Surface resistivity	10 <sup>13</sup>	-	-	10 <sup>3</sup>	10 <sup>9</sup> - 10 <sup>11</sup>	Ohm
Dielectric constant, 50hz	3.8	-	3.7	-	-	-
Dielectric disppation factor, 50 Hz	0.002	-	0.002	-	-	-
Dielectric strength	40	-	33	-	-	Kv/mm
Comparative tracking index (CTI) - solution	600	-	600	-	-	-

### THERMAL PROPERTIES

Melting Temperature	165	165	165	165	165	°C
Heat deflection temperature - method A, 1.8 MPa	110	160	98	89		°C
Coefficient of thermal expansion (avg between 20 - 60°C)	110	30	120	130	170	10 <sup>-6</sup> .K <sup>-1</sup>
Specific thermal capacity at 100°C	1.50	-	-	-	-	kJ/(kg - K)
Thermal conductivity at 20°C	0.31	-	-	0.31	-	W/(m-K)
Service temperature - long term	-50 to +100	-20 to +100	-50 to +100	-20 to +100	-50 to +85	°C
- short term	+140	+140	+140	+140	+140	

### CHEMICAL RESISTANCE

Acid resistance	+	+/0		+/0	+
Alkali resistance	+	+		+	+
Hydrocarbon resistance	+	+		+	+
Chlorinated hydrocarbon resistance	0	0		0	0
Aromatic resistance	+	+		+	+
Ketone resistance	+	+		+	+
Resistance to hot water	+	+		+	+

KEY: + = YES 0 = LIMITED - = NO