

**Mitsubishi Chemical Advanced Materials Acetron® MD Metal-detectable Copolymer Acetal (ASTM Product Data Sheet)**
**Categories:** Polymer; Thermoplastic; Acetal (Polyoxymethylene, POM); Acetal Copolymer, Unreinforced

**Material Notes:**

- 1 Low moisture absorption
- 1 High strength, stiffness
- 1 Easy to machine
- 1 No centerline porosity in Acetron® GP
- 1 Many formulation options: Copolymer, Homopolymer, PTFE filled, and Internally lubricated/enhanced wear grade

Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

**Key Words:** POM, Polyoxymethylene; Polyformaldehyde; Polyacetal

Physical Properties	Metric	English	Comments
Specific Gravity	1.47 g/cc	1.47 g/cc	ASTM D792
Water Absorption	0.20 %	0.20 %	Immersion, 24hr; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	89	89	ASTM D785
Hardness, Rockwell R	121	121	ASTM D785
Hardness, Shore D	85	85	ASTM D2240
Tensile Strength	62.1 MPa	9000 psi	ASTM D638
Tensile Strength at 65°C (150°F)	49.6 MPa	7200 psi	ASTM D638
Elongation at Break	15 %	15 %	ASTM D638
Tensile Modulus	2.86 GPa	415 ksi	ASTM D638
Flexural Strength	82.7 MPa	12000 psi	ASTM D790
Flexural Modulus	2.762 GPa	400.6 ksi	ASTM D790
Compressive Strength	91.0 MPa	13200 psi	10% Def.; ASTM D695
Compressive Modulus	1.86 GPa	270 ksi	ASTM D695
Shear Strength	55.2 MPa	8000 psi	ASTM D732
Izod Impact, Notched	0.427 J/cm	0.800 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.30	0.30	Dry vs. Steel; QTM55007
K (wear) Factor	806 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	400 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.140 MPa-m/sec	4000 psi-ft/min	4:1 safety factor; QTM 55007
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	EOS/ESD S11.11
Thermal Properties	Metric	English	Comments
CTE, linear	128 µm/m-°C	71.0 µin/in-°F	ASTM E831
Melting Point	171 °C	340 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	82.2 °C	180 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	138 °C	280 °F	ASTM D648
Flammability, UL94	HB @Thickness 3.17 mm	HB @Thickness 0.125 in	Estimated Rating
Compliance Properties	Metric	English	Comments
FDA	Yes	Yes	
USP Class VI	No	No	
Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Unacceptable	Unacceptable	
Acids, Weak	Limited	Limited	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Limited	Limited	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	



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