

Mitsubishi Chemical Advanced Materials Acetron® POM-H Natural and Black Homopolymer Acetal, Unfilled, Extruded (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Acetal (Polyoxymethylene, POM); Acetal Homopolymer, Unreinforced

Material Notes: PLEASE NOTE, BELOW COMPLIANCE INFO IS FOR NATURAL ONLY

Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Key Words: POM, Polyoxymethylene; Polyformaldehyde; Polyacetal

Physical Properties	Metric	English	Comments
Specific Gravity	1.41 g/cc	1.41 g/cc	ASTM D792
Water Absorption	0.20 %	0.20 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.90 %	0.90 %	Immersion; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	89	89	ASTM D785
Hardness, Rockwell R	122	122	ASTM D785
Hardness, Shore D	86	86	ASTM D2240
Tensile Strength	75.8 MPa	11000 psi	ASTM D638
Tensile Strength at 65°C (150°F)	49.6 MPa	7200 psi	ASTM D638
Elongation at Break	30 %	30 %	ASTM D638
Tensile Modulus	3.10 GPa	450 ksi	ASTM D638
Flexural Strength	89.6 MPa	13000 psi	ASTM D790
Flexural Modulus	3.10 GPa	450 ksi	ASTM D790
Compressive Strength	103 MPa	15000 psi	10% Def.; ASTM D695
Compressive Modulus	2.07 GPa	300 ksi	ASTM D695
Shear Strength	62.1 MPa	9000 psi	ASTM D732
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.25	0.25	Dry vs. Steel; QTM55007
K (wear) Factor	403 x 10 ⁻⁸ mm ³ /N-M	200 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.0946 MPa-m/sec	2700 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
Dielectric Constant	3.7 @Frequency 1e+6 Hz	3.7 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	17.7 kV/mm	450 kV/in	Short Term; ASTM D149
Dissipation Factor	0.0050 @Frequency 1e+6 Hz	0.0050 @Frequency 1e+6 Hz	ASTM D150

Thermal Properties	Metric	English	Comments
CTE, linear	84.6 µm/m-°C @Temperature -40.0 - 149 °C	47.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.360 W/m-K	2.50 BTU-in/hr-ft ² -°F	ASTM F433
Melting Point	175 °C	347 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	82.2 °C	180 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	121 °C	250 °F	ASTM D648
Flammability, UL94	HB @Thickness 3.17 mm	HB @Thickness 0.125 in	Estimated Rating

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	Yes	Yes	NATURAL ONLY
FDA	Yes	Yes	NATURAL ONLY
NSF	Yes	Yes	NATURAL ONLY
USDA	Yes	Yes	NATURAL ONLY
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

Descriptive Properties

Machinability	1	1-10, 1=Easier to Machine
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