

**Quadrant EPP Acetron® POM-H Homopolymer Acetal, Unfilled, Extruded (ASTM Product Data Sheet)**
**Categories:** Polymer; Thermoplastic; Acetal (POM); Acetal Homopolymer, Unreinforced

**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                     |
| 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                        | 110 MPa                                     | 16000 psi   | 10% Def.; ASTM D695           |
| Compressive Modulus                         | 3.10 GPa                                    | 450 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 <sup>-9</sup> mm <sup>3</sup> /N-M | 200 x 10 <sup>-10</sup> in <sup>3</sup> -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   | 3.7   | ASTM D150                     |
|   | @Frequency 1e+6 Hz                          | @Frequency 1e+6 Hz                                    |                               |
| Dielectric Strength                         | 17.7 kV/mm                                  | 450 kV/in   | Short Term; ASTM D149         |
| Dissipation Factor                          | 0.0050                                      | 0.0050  | ASTM D150                     |
|   | @Frequency 1e+6 Hz                          | @Frequency 1e+6 Hz                                    |                               |
| Thermal Properties                          | Metric                                      | English   | Comments                      |
| CTE, linear                                 | 84.6 µm/m-°C                                | 47.0 µin/in-°F  | ASTM E831                     |
|   | @Temperature -40.0 - 149 °C                 | @Temperature -40.0 - 300 °F                           |                               |
| Thermal Conductivity                        | 0.360 W/m-K                                 | 2.50 BTU-in/hr-ft <sup>2</sup> -°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  | HB  | 1/8 inch (Estimated Rating)   |
| Compliance Properties                       | Metric                                      | English   | Comments                      |
| 3A-Dairy                                    | No  | No  |                               |
| Canada AG                                   | Yes   | Yes   |                               |
| FDA   | Yes   | Yes   | Natural Only                  |
| NSF   | Yes   | Yes   | STD 51 & 61                   |
| USDA  | 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 |

**Descriptive Properties**

|               |   |                           |
|---------------|---|---------------------------|
| Machinability | 1 | 1-10, 1=Easier to Machine |
|---------------|---|---------------------------|