

**Quadrant EPP Ertalyte® PET-P, Polyester-semi-crystalline thermoplastic, extruded (ASTM Product Data Sheet)**
**Categories:** Polymer; Thermoplastic; Polyester, TP; Polyethylene Terephthalate (PET); PET-P Polyester, Extruded

| Physical Properties                         | Metric                                      | English  | Comments                      |
|---|---|--|-------------------------------|
| Specific Gravity                            | 1.41 g/cc                                   | 1.41 g/cc  | ASTM D792                     |
| Water Absorption                            | 0.070 %                                     | 0.070 %  | 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                        | 101   | 101  | ASTM D785                     |
| Hardness, Rockwell R                        | 126   | 126  | ASTM D785                     |
| Hardness, Shore D                           | 84  | 84   | ASTM D2240                    |
| Tensile Strength                            | 85.5 MPa                                    | 12400 psi  | ASTM D638                     |
| Tensile Strength at 65°C (150°F)            | 55.2 MPa                                    | 8000 psi   | ASTM D638                     |
| Elongation at Break                         | 20 %  | 20 %   | ASTM D638                     |
| Tensile Modulus                             | 3.17 GPa                                    | 460 ksi  | ASTM D638                     |
| Flexural Strength                           | 124 MPa                                     | 18000 psi  | ASTM D790                     |
| Flexural Modulus                            | 3.38 GPa                                    | 490 ksi  | ASTM D790                     |
| Compressive Strength                        | 103 MPa                                     | 15000 psi  | 10% Def.; ASTM D695           |
| Compressive Modulus                         | 2.90 GPa                                    | 420 ksi  | ASTM D695                     |
| Shear Strength                              | 55.2 MPa                                    | 8000 psi   | ASTM D732                     |
| Izod Impact, Notched                        | 0.267 J/cm                                  | 0.500 ft-lb/in   | ASTM D256 Type A              |
| Coefficient of Friction, Dynamic            | 0.20  | 0.20   | Dry vs. Steel; QTM55007       |
| K (wear) Factor                             | 121 x 10 <sup>-5</sup> mm <sup>3</sup> /N-M | 60.0 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr | QTM 55010                     |
| Limiting Pressure Velocity                  | 0.0981 MPa-m/sec                            | 2800 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                         | 3.4<br>@Frequency 1e+6 Hz                   | 3.4<br>@Frequency 1e+6 Hz                              | ASTM D150                     |
| Dielectric Strength                         | 15.2 kV/mm                                  | 385 kV/in  | Short Term; ASTM D149         |
| Dissipation Factor                          | 0.020<br>@Frequency 1e+6 Hz                 | 0.020<br>@Frequency 1e+6 Hz                            | ASTM D150                     |
| Thermal Properties                          | Metric                                      | English  | Comments                      |
| CTE, linear                                 | 59.4 µm/m-°C<br>@Temperature -40.0 - 149 °C | 33.0 µin/in-°F<br>@Temperature -40.0 - 300 °F          | ASTM E831                     |
| Thermal Conductivity                        | 0.288 W/m-K                                 | 2.00 BTU-in/hr-ft <sup>2</sup> -°F                     | ASTM F433                     |
| Melting Point                               | 255 °C                                      | 491 °F   | Crystalline, Peak; ASTM D3418 |
| Maximum Service Temperature, Air            | 98.9 °C                                     | 210 °F   | Long Term                     |
| Deflection Temperature at 1.8 MPa (264 psi) | 116 °C                                      | 240 °F   | ASTM D648                     |
| Flammability, UL94                          | HB  | HB   | 1/8 inch (Estimated Rating)   |
| Compliance Properties                       | Metric                                      | English  | Comments                      |
| 3A-Dairy                                    | Yes   | Yes  | Natural Only                  |
| Canada AG                                   | Yes   | Yes  | Natural Only                  |
| FDA   | Yes   | Yes  |                               |
| NSF   | No  | No   |                               |
| USDA  | Yes   | Yes  |                               |
| USP Class VI                                | No  | No   |                               |
| Chemical Resistance Properties              | Metric                                      | English  | Comments                      |
| Acids, Strong (pH 1-3)                      | Limited                                     | Limited  |                               |
| Acids, Weak                                 | Acceptable                                  | Acceptable   |                               |
| Alcohols                                    | Acceptable                                  | Acceptable   |                               |
| Alkalies, Strong (pH 11-14)                 | Unacceptable                                | Unacceptable   |                               |
| Alkalies, Weak                              | Acceptable                                  | Acceptable   |                               |
| Chlorinated Solvents                        | Unacceptable                                | Unacceptable   |                               |
| 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**

|               |                   |                           |
|---------------|-------------------|---------------------------|
| Color         | Natural and black |                           |
| Machinability | 2                 | 1-10, 1=Easier to Machine |