# Quadrant EPP Ertalon® 4.6 PA 4.6, extruded (ISO Data)

**Category :** Polymer , Thermoplastic , Nylon , Nylon 46 , Nylon 46, Unreinforced

**Material Notes:**

Compared with conventional nylons, Ertalon 4.6 features a better retention of stiffness and creep resistance over a wide range of temperatures as well as superior heat ageing resistance. Therefore, applications for Ertalon 4.6 are situated in the "higher temperature area" (80 – 150 °C) where stiffness, creep resistance, heat ageing resistance, fatigue strength and wear resistance of PA 6, PA 66, POM and PET fall short. High mechanical strength, stiffness, hardness and toughness Good fatigue resistance High mechanical damping ability Good sliding properties Excellent wear resistance Good electrical insulating properties Good resistance to high energy radiation (gamma- and X-rays) Good machinability

Order this product through the following link:
http://www.lookpolymers.com/polymer_Quadrant-EPP-Ertalon-46-PA-46-extruded-ISO-Data.php

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Density | 1.19 g/cc | 0.0430 lb/in³ | ISO 1183-1 |
| Moisture Absorption at Equilibrium | 2.8 % | 2.8 % | 50% RH |
| Water Absorption at Saturation | 9.5 % | 9.5 % | |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Hardness, Rockwell M | 92 | 92 | ISO 2039-2 |
| Hardness, Shore D | 80 | 80 | |
| Ball Indentation Hardness | 165 MPa | 23900 psi | ISO 2039-1 |
| Tensile Strength | 105 MPa | 15200 psi | at Yield; ISO 527-1/-2 |
| Elongation at Break | 25 % | 25 % | ISO 527-1/-2 |
| Elongation at Yield | 18 % | 18 % | ISO 527-1/-2 |
| Tensile Modulus | 3.40 GPa | 493 ksi | ISO 527-1/-2 |
| Flexural Strength | 138 MPa | 20000 psi | |
| Flexural Modulus | 3.23 GPa | 468 ksi | |
| Compressive Strength | 31.0 MPa @Strain 1 % | 4500 psi @Strain 1 % | ISO 604 |
| | 60.0 MPa @Strain 2 % | 8700 psi @Strain 2 % | ISO 604 |
| | 102 MPa | 14800 psi | ISO 604 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| | @Strain 5 % | @Strain 5 % | |
| K Factor (ISO) | 18 µm/km | 18 µm/km | |
| Charpy Impact Unnotched | NB | NB | ISO 179-1/1eU |
| Charpy Impact, Notched | 0.800 J/cm² | 3.81 ft-lb/in² | ISO 179-1/1eA |
| Coefficient of Friction, Dynamic | 0.40 - 0.60 | 0.40 - 0.60 | |
| Limiting Pressure Velocity | 0.100 MPa-m/sec | 2860 psi-ft/min | at 1 m/s unlubricated |
| | 0.160 MPa-m/sec | 4570 psi-ft/min | at 0.1 m/s unlubricated |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| CTE, linear | 90.0 µm/m-°C<br>@Temperature 23.0 - 100 °C | 50.0 µin/in-°F<br>@Temperature 73.4 - 212 °F | |
| Thermal Conductivity | 0.300 W/m-K | 2.08 BTU-in/hr-ft²-°F | |
| Melting Point | 290 °C | 554 °F | DSC, 10°C/min.; ISO 11357-1/-3 |
| Maximum Service Temperature, Air | 130 °C | 266 °F | Continuous; 20,000 h |
| | 150 °C | 302 °F | Continuous; 5,000 h |
| Deflection Temperature at 1.8 MPa (264 psi) | 160 °C | 320 °F | ISO 75-1/-2 |
| Flammability, UL94 | HB | HB | |
| Oxygen Index | 24 % | 24 % | ISO 4589-1/-2 |

| Electrical Properties | Metric | English | Comments |
|---|---|---|---|
| Volume Resistivity | >= 1.0e+14 ohm-cm | >= 1.0e+14 ohm-cm | IEC 60093 |
| Surface Resistivity per Square | >= 1.0e+13 ohm | >= 1.0e+13 ohm | IEC 60093 |
| Dielectric Constant | 3.8<br>@Frequency >=100000 Hz | 3.8<br>@Frequency >=100000 Hz | IEC 60250 |
| Dielectric Strength | 25.0 kV/mm | 635 kV/in | |
| Dissipation Factor | 0.0090<br>@Frequency 100000 Hz | 0.0090<br>@Frequency 100000 Hz | IEC 60250 |
| Comparative Tracking Index | 400 V | 400 V | IEC 60112 |

| Compliance Properties | Metric | English | Comments |
|---|---|---|---|
| 3A-Dairy | No | No | |
| European Food 1935/2004 | No | No | |
| FDA | No | No | |
| USP Class VI | No | No | |

| Chemical Resistance Properties | Metric | English | Comments |
|---|---|---|---|
| Acids, Strong (pH 1-3) | Unacceptable | Unacceptable | |
| Acids, Weak | Limited | Limited | |
| Alcohols | Limited | Limited | |
| Alkalies, Strong (pH 11-14) | Unacceptable | Unacceptable | |
| Alkalies, Weak | Limited | Limited | |
| Chlorinated Solvents | Limited | Limited | |
| 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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