

## Quadrant EPP Ertalon® LFX PA 6 + oil, cast (ISO Data)

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , Cast

### Material Notes:

This internally lubricated cast nylon 6 is self-lubricating in the real meaning of the word. Ertalon LFX, especially developed for unlubricated, highly loaded and slow moving parts applications, yields a considerable enlargement of the application opportunities compared to standard cast nylons. It offers a reduced coefficient of friction (up to 50% lower), considerably increasing the pressure-velocity capabilities, and a vastly improved wear resistance (up to 10 times better). 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-LFX-PA-6-oil-cast-ISO-Data.php](http://www.lookpolymers.com/polymer_Quadrant-EPP-Ertalon-LFX-PA-6-oil-cast-ISO-Data.php)

| Physical Properties                | Metric     | English                    | Comments   |
|------------------------------------|------------|----------------------------|------------|
| Density                            | 1.135 g/cc | 0.04100 lb/in <sup>3</sup> | ISO 1183-1 |
| Moisture Absorption at Equilibrium | 2.0 %      | 2.0 %                      | 50% RH     |
| Water Absorption at Saturation     | 6.3 %      | 6.3 %                      |            |

| Mechanical Properties     | Metric      | English     | Comments               |
|---------------------------|-------------|-------------|------------------------|
| Hardness, Rockwell M      | 82          | 82          | ISO 2039-2             |
| Hardness, Shore D         | 76          | 76          |                        |
| Ball Indentation Hardness | 145 MPa     | 21000 psi   | ISO 2039-1             |
| Tensile Strength          | 73.0 MPa    | 10600 psi   | at Yield; ISO 527-1/-2 |
| Elongation at Break       | 25 %        | 25 %        | ISO 527-1/-2           |
| Elongation at Yield       | 5.0 %       | 5.0 %       | ISO 527-1/-2           |
| Tensile Modulus           | 3.00 GPa    | 435 ksi     | ISO 527-1/-2           |
| Flexural Strength         | 107 MPa     | 15500 psi   |                        |
| Flexural Modulus          | 3.00 GPa    | 435 ksi     |                        |
| Compressive Strength      | 31.0 MPa    | 4500 psi    | ISO 604                |
|                           | @Strain 1 % | @Strain 1 % |                        |
|                           | 58.0 MPa    | 8410 psi    | ISO 604                |
|                           | @Strain 2 % | @Strain 2 % |                        |
|                           | 85.0 MPa    | 12300 psi   | ISO 604                |

| Mechanical Properties            | @Strain 5 %<br>Metric   | @Strain 5 %<br>English     | Comments                |
|----------------------------------|-------------------------|----------------------------|-------------------------|
| K Factor (ISO)                   | 4.5 µm/km               | 4.5 µm/km                  |                         |
| Charpy Impact Unnotched          | 5.00 J/cm <sup>2</sup>  | 23.8 ft-lb/in <sup>2</sup> | ISO 179-1/1eU           |
| Charpy Impact, Notched           | 0.400 J/cm <sup>2</sup> | 1.90 ft-lb/in <sup>2</sup> | ISO 179-1/1eA           |
| Coefficient of Friction, Dynamic | 0.20 - 0.35             | 0.20 - 0.35                |                         |
| Limiting Pressure Velocity       | 0.150 MPa-m/sec         | 4280 psi-ft/min            | at 1 m/s unlubricated   |
|                                  | 0.230 MPa-m/sec         | 6570 psi-ft/min            | at 0.1 m/s unlubricated |

| Thermal Properties                          | Metric                     | English                            | Comments                       |
|---|----------------------------|------------------------------------|--------------------------------|
| CTE, linear                                 | 90.0 µm/m-°C               | 50.0 µin/in-°F                     |                                |
|   | @Temperature 23.0 - 100 °C | @Temperature 73.4 - 212 °F         |                                |
| Thermal Conductivity                        | 0.280 W/m-K                | 1.94 BTU-in/hr-ft <sup>2</sup> -°F |                                |
| Melting Point                               | 215 °C                     | 419 °F                             | DSC, 10°C/min.; ISO 11357-1/-3 |
| Maximum Service Temperature, Air            | 90.0 °C                    | 194 °F                             | Continuous; 20,000 h           |
|   | 105 °C                     | 221 °F                             | Continuous; 5,000 h            |
| Deflection Temperature at 1.8 MPa (264 psi) | 75.0 °C                    | 167 °F                             | ISO 75-1/-2                    |
| Flammability, UL94                          | HB                         | HB                                 |                                |

| 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            | 3.5                    | 3.5                    | IEC 60250 |
|                                | @Frequency >=100000 Hz | @Frequency >=100000 Hz |           |
| Dielectric Strength            | 22.0 kV/mm             | 559 kV/in              |           |
| Dissipation Factor             | 0.015                  | 0.015                  | IEC 60250 |
|                                | @Frequency 100000 Hz   | @Frequency 100000 Hz   |           |
| Comparative Tracking Index     | 600 V                  | 600 V                  | IEC 60112 |

| Compliance Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------|
|-----------------------|--------|---------|----------|

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

| <b>Chemical Resistance Properties</b> | <b>Metric</b> | <b>English</b> | <b>Comments</b> |
|---------------------------------------|---------------|----------------|-----------------|
| 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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