

# QUADRANT EPP PRODUCT DATA SHEET

June 2001

## ERTALON® 6XAU+

Cast Nylon 6 (PA6G, Heat Stabilised)

ERTALON® 6XAU+ is a heat stabilised cast nylon 6 with a dense and highly crystalline structure. It offers better mechanical properties than conventional extruded or cast nylons, including superior resistance to creep and wear, better heat ageing performance and excellent machinability. ERTALON® 6XAU+ is particularly recommended for bearings, and other mechanical parts subject to wear, that are operating at temperatures above 60°C.

- High impact strength
- High mechanical damping
- Good alkaline resistance (up to pH 11)
- High strength / stiffness
- Good fatigue resistance
- Low weight (1/6 vs steel)
- Good wear resistance
- Continuous temperature 105°C (max. 180°C)

Common applications: Rail wheels; Gears; Bearings; Rollers; Wheels; Cams; Nuts; Valve seats; Pulleys; Gaskets; Electrical insulators.

### Delivery Programme

|                  |                         |           |
|------------------|-------------------------|-----------|
| Rod 3m long      |                         |           |
| Diameter (mm):   | 50 (Min)                | 150 (Max) |
| Rod 1m long      |                         |           |
| Diameter (mm):   | 50 (Min)                | 500 (Max) |
| Rod 500mm long   |                         |           |
| Diameter (mm):   | 210 (Min)               | 500 (Max) |
| Plate            |                         |           |
| Thickness (mm):  | 8 (Min)                 | 100 (Max) |
| Sizes (mm):      | 610 x 1220, 1220 x 2440 |           |
| Plate            |                         |           |
| Thickness (mm):  | 10 (Min)                | 100 (Max) |
| Sizes (mm):      | 1220 x 2000             |           |
| Tube 2m long     |                         |           |
| O.D. (mm):       | 50 (Min)                | 150 (Max) |
| I.D. (mm):       | 20 (Min)                | 135 (Max) |
| Tube 1000mm long |                         |           |
| O.D. (mm):       | 155 (Min)               | 260 (Max) |
| I.D. (mm):       | 50 (Min)                | 235 (Max) |
| Tube 600mm long  |                         |           |
| O.D. (mm):       | 220 (Min)               | 600 (Max) |
| I.D. (mm):       | 70 (Min)                | 570 (Max) |

### Distributor

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### Technical Specification

| Property                                    | ISO Methods | Units                              | ERTALON® 6XAU+    |
|---|-------------|------------------------------------|-------------------|
| Colour                                      | -           | -                                  | Black             |
| Density                                     | 1183        | g/cm <sup>3</sup>                  | 1.15              |
| Water absorption                            |             |                                    |                   |
| Saturation in air (23°C / 50% RH)           | -           | %                                  | 2.20              |
| Saturation in water (23°C)                  | -           | %                                  | 6.50              |
| Tensile strength* <sup>1</sup>              | 527         | N/mm <sup>2</sup>                  | 83                |
| Tensile modulus of elasticity* <sup>1</sup> | 527         | N/mm <sup>2</sup>                  | 3400              |
| Elongation at break* <sup>1</sup>           | 527         | %                                  | 25                |
| Impact - Charpy* <sup>1</sup>               | 179/1eU     | kJ/m <sup>2</sup>                  | no break          |
| Impact - Izod notched* <sup>1</sup>         | 180/2A      | kJ/m <sup>2</sup>                  | 3.5               |
| Hardness                                    | Rockwell    | -                                  | M87               |
|   | Shore D     | -                                  | -                 |
| Melt point                                  | -           | °C                                 | 220               |
| Max allowable service temp in air           |             |                                    |                   |
| for short periods                           | -           | °C                                 | 180               |
| continuously for 20,000hrs                  | -           | °C                                 | 105               |
| Linear thermal expansion coefficient        | -           | K <sup>-1</sup> x 10 <sup>-5</sup> | 8.0               |
| Thermal conductivity                        | -           | W/(K.m)                            | 0.29              |
| Flammability* <sup>2</sup> (6mm thickness)  | -           | -                                  | HB                |
| Volume resistivity* <sup>1</sup>            | IEC93       | Ohm.cm                             | >10 <sup>14</sup> |
| Dielectric strength* <sup>1</sup>           | IEC243      | kV/mm                              | 29                |
| Outside applications - UV resistance        | -           | -                                  | B                 |
| Acids - strong (pH < 3)                     | -           | -                                  | C                 |
| Alkalis - strong (pH > 11)                  | -           | -                                  | B/C               |
| Chlorinated hydrocarbons                    | -           | -                                  | A/B               |
| Hot water                                   | -           | -                                  | B                 |

'A' - Acceptable service; 'B' - Limited service; 'C' - Unacceptable.

\*<sup>1</sup> Measured on dry test specimens (where applicable)

\*<sup>2</sup> Tests completed by Quadrant EPP, using UL test methods

Not all material sizes shown within the delivery programme section of this data sheet are available as standard. Please contact Quadrant EPP UK Ltd for further details.

The data shown are typical values and are not intended to represent specifications. Their aim is to guide the user toward a material choice.