

# Promyde® B40 LN

Polyamide 6

NUREL, S.A.

## Message:

Promyde B40 LN is a high viscosity lubricated and nucleated Polyamide 6.

### CHARACTERISTICS

Promyde B40 LN is a high viscosity polyamide 6 heat stabilized, lubricated and nucleated for injection moulding.

### APPLICATIONS

Promyde B40 LN is typically used for the manufacture of small resistant wheels required to support weight such as glass doors, also small technical parts where more resistance to wear and tear is needed over standard viscosity polyamide.

| General Information                        |            |                                                                                          |                        |              |
|--------------------------------------------|------------|------------------------------------------------------------------------------------------|------------------------|--------------|
| Additive                                   |            | Nucleating agent<br>heat stabilizer<br>Lubricant                                         |                        |              |
| Features                                   |            | Nucleated<br>Good wear resistance<br>Thermal Stability<br>Lubrication<br>Viscosity, High |                        |              |
| Uses                                       |            | Wheels<br>Engineering accessories<br>Machine/mechanical parts                            |                        |              |
| Processing Method                          |            | Injection molding                                                                        |                        |              |
| Physical                                   | Dry        | Conditioned                                                                              | Unit                   | Test Method  |
| Density (23°C)                             | 1.13       | --                                                                                       | g/cm <sup>3</sup>      | ISO 1183     |
| Melt Volume-Flow Rate (MVR) (275°C/5.0 kg) | 14.0       | --                                                                                       | cm <sup>3</sup> /10min | ISO 1133     |
| Molding Shrinkage                          |            |                                                                                          |                        |              |
| Vertical flow direction                    | 0.80 - 1.1 | --                                                                                       | %                      |              |
| Flow direction                             | 0.90 - 1.1 | --                                                                                       | %                      |              |
| Water Absorption                           |            |                                                                                          |                        | ISO 62       |
| Saturated, 23°C                            | 9.5        | --                                                                                       | %                      | ISO 62       |
| Equilibrium, 23°C, 50% RH                  | 3.0        | --                                                                                       | %                      | ISO 62       |
| Viscosity Number                           | 263        | --                                                                                       | cm <sup>3</sup> /g     | ISO 307      |
| Mechanical                                 | Dry        | Conditioned                                                                              | Unit                   | Test Method  |
| Tensile Modulus (23°C)                     | 3400       | 1100                                                                                     | MPa                    | ISO 527-2/1  |
| Tensile Stress (23°C)                      | 90.0       | 40.0                                                                                     | MPa                    | ISO 527-2/50 |

|                                         |               |             |                   |              |
|-----------------------------------------|---------------|-------------|-------------------|--------------|
| Tensile Strain                          |               |             |                   | ISO 527-2/50 |
| Yield, 23°C                             | 4.0           | 25          | %                 | ISO 527-2/50 |
| Fracture, 23°C                          | 70            | > 50        | %                 | ISO 527-2/50 |
| Flexural Modulus <sup>1</sup> (23°C)    | 2900          | 1000        | MPa               | ISO 178      |
| Flexural Stress <sup>2</sup> (23°C)     | 115           | 30.0        | MPa               | ISO 178      |
| Impact                                  | Dry           | Conditioned | Unit              | Test Method  |
| Charpy Notched Impact Strength (23°C)   | 6.2           | 38          | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy Unnotched Impact Strength (23°C) | No Break      | No Break    |                   | ISO 179/1eU  |
| Thermal                                 | Dry           | Conditioned | Unit              | Test Method  |
| Heat Deflection Temperature             |               |             |                   |              |
| 0.45 MPa, not annealed                  | 197           | --          | °C                | ISO 75-2/B   |
| 1.8 MPa, not annealed                   | 65.0          | --          | °C                | ISO 75-2/A   |
| Melting Temperature (DSC) <sup>3</sup>  | 223           | --          | °C                | ISO 3146     |
| Linear thermal expansion coefficient    |               |             |                   | ISO 11359-2  |
| Flow: 23 to 80°C                        | 7.0E-5        | --          | cm/cm/°C          | ISO 11359-2  |
| Lateral: 23 to 80°C                     | 1.0E-4        | --          | cm/cm/°C          | ISO 11359-2  |
| Electrical                              | Dry           | Conditioned | Unit              | Test Method  |
| Surface Resistivity                     | 1.0E+13       | 1.0E+10     | ohms              | IEC 60093    |
| Volume Resistivity                      | 1.0E+15       | 1.0E+12     | ohms·cm           | IEC 60093    |
| Dielectric Constant (1 MHz)             | 3.50          | 7.00        |                   | IEC 60250    |
| Dissipation Factor (1 MHz)              | 0.030         | 0.30        |                   | IEC 60250    |
| Comparative Tracking Index              | 600           | --          | V                 | IEC 60112    |
| Flammability                            | Dry           | Conditioned | Unit              | Test Method  |
| Flame Rating (1.50 mm)                  | V-2           | --          |                   | UL 94        |
| Injection                               | Dry           | Unit        |                   |              |
| Drying Temperature                      | < 80.0        |             | °C                |              |
| Drying Time                             | 4.0 - 6.0     |             | hr                |              |
| Processing (Melt) Temp                  | 250 - 270     |             | °C                |              |
| Mold Temperature                        | 40.0 - 80.0   |             | °C                |              |
| Injection Rate                          | Moderate-Fast |             |                   |              |
| Injection instructions                  |               |             |                   |              |
| Back Pressure: moderate                 |               |             |                   |              |
| NOTE                                    |               |             |                   |              |
| 1.                                      | 2.0 mm/min    |             |                   |              |
| 2.                                      | 2.0 mm/min    |             |                   |              |
| 3.                                      | 10°C/min      |             |                   |              |

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

