

# Durethan® BKV 30 DUS000 000000

Polyamide 6

LANXESS GmbH

## Message:

PA 6, 30 % glass fibers, injection molding

| General Information                             |       |                                  |                        |                        |
|-------------------------------------------------|-------|----------------------------------|------------------------|------------------------|
| Filler / Reinforcement                          |       | Glass Fiber,30% Filler by Weight |                        |                        |
| Processing Method                               |       | Injection Molding                |                        |                        |
| Physical                                        | Dry   | Conditioned                      | Unit                   | Test Method            |
| Specific Gravity                                |       |                                  |                        |                        |
|                                                 | 1.36  |                                  |                        |                        |
| --                                              | 1.36  | --                               | g/cm <sup>3</sup>      | ASTM D792              |
| 23°C                                            | 1.36  | --                               | g/cm <sup>3</sup>      | ISO 1183               |
| Apparent Density                                | 0.70  | --                               | g/cm <sup>3</sup>      | ISO 60                 |
| Melt Volume-Flow Rate (MVR) (260°C/5.0 kg)      | 14.0  | --                               | cm <sup>3</sup> /10min | ISO 1133               |
| Molding Shrinkage                               |       |                                  |                        | ISO 2577               |
| Across Flow : 280°C, 3.00 mm <sup>1</sup>       | 0.82  | --                               | %                      |                        |
| Across Flow : 120°C, 4 hr, 3.00 mm <sup>2</sup> | 0.12  | --                               | %                      |                        |
| Flow : 280°C, 3.00 mm <sup>3</sup>              | 0.16  | --                               | %                      |                        |
| Flow : 120°C, 4 hr, 3.00 mm <sup>4</sup>        | 0.030 | --                               | %                      |                        |
| Water Absorption                                |       |                                  |                        | ISO 62                 |
| Saturation, 23°C                                | 7.0   | --                               | %                      |                        |
| Equilibrium, 23°C, 50% RH                       | 2.1   | --                               | %                      |                        |
| Hardness                                        | Dry   | Conditioned                      | Unit                   | Test Method            |
| Ball Indentation Hardness                       | 210   | 100                              | MPa                    | ISO 2039-1             |
| Mechanical                                      | Dry   | Conditioned                      | Unit                   | Test Method            |
| Tensile Modulus                                 |       |                                  |                        |                        |
| 23°C <sup>5</sup>                               | 9200  | 5600                             | MPa                    | ASTM D638              |
| 23°C                                            | 9800  | 6100                             | MPa                    | ISO 527-2/1            |
| Tensile Strength                                |       |                                  |                        |                        |
| Break, 23°C                                     | 180   | 100                              | MPa                    | ASTM D638              |
| Break, 23°C                                     | 180   | 105                              | MPa                    | ISO 527-2/5            |
| Tensile Elongation (Break, 23°C)                | 3.0   | 6.0                              | %                      | ASTM D638, ISO 527-2/5 |
| Tensile Creep Modulus                           |       |                                  |                        | ISO 899-1              |

|                                                          |                        |             |                   |             |
|----------------------------------------------------------|------------------------|-------------|-------------------|-------------|
| 1 hr                                                     | --                     | 5100        | MPa               |             |
| 1000 hr                                                  | --                     | 4100        | MPa               |             |
| Flexural Modulus                                         |                        |             |                   |             |
| 23°C                                                     | 8270                   | 5000        | MPa               | ASTM D790   |
| 23°C <sup>6</sup>                                        | 8600                   | 5100        | MPa               | ISO 178/A   |
| Flexural Strength                                        |                        |             |                   |             |
| 23°C                                                     | 280                    | 170         | MPa               | ASTM D790   |
| 3.5% Strain, 23°C                                        | --                     | 145         | MPa               | ISO 178/A   |
| 23°C <sup>7</sup>                                        | 280                    | 170         | MPa               | ISO 178/A   |
| Flexural Strain at Flexural Strength <sup>8</sup> (23°C) | 4.0                    | 6.0         | %                 | ISO 178/A   |
| Burning Behavior <sup>9</sup> (> 1.00 mm)                | passed                 | --          |                   | ISO 3795    |
| ISO Shortname                                            | PA 6, GR, 14-100, GF30 | --          |                   | ISO 1874    |
| Residual Moisture Content                                | 0.030 to 0.12          |             | %                 | Karl Fisher |
| Impact                                                   | Dry                    | Conditioned | Unit              | Test Method |
| Charpy Notched Impact Strength                           |                        |             |                   | ISO 179/1eA |
| -30°C                                                    | 10                     | 10          | kJ/m <sup>2</sup> |             |
| 23°C                                                     | 15                     | 20          | kJ/m <sup>2</sup> |             |
| Charpy Unnotched Impact Strength                         |                        |             |                   | ISO 179/1eU |
| -30°C                                                    | 70                     | 70          | kJ/m <sup>2</sup> |             |
| 23°C                                                     | 80                     | 95          | kJ/m <sup>2</sup> |             |
| Notched Izod Impact                                      |                        |             |                   |             |
| -40°C, 3.18 mm                                           | 100                    | 100         | J/m               | ASTM D256   |
| 23°C, 3.18 mm                                            | 120                    | 150         | J/m               | ASTM D256   |
| -30°C                                                    | 10                     | 10          | kJ/m <sup>2</sup> | ISO 180/1A  |
| 23°C                                                     | 15                     | 20          | kJ/m <sup>2</sup> | ISO 180/1A  |
| Unnotched Izod Impact Strength                           |                        |             |                   | ISO 180/1U  |
| -30°C                                                    | 60                     | 70          | kJ/m <sup>2</sup> |             |
| 23°C                                                     | 75                     | 80          | kJ/m <sup>2</sup> |             |
| Multi-Axial Instrumented Impact Energy                   |                        |             |                   | ISO 6603-2  |
| -30°C                                                    | 6.00                   | 5.00        | J                 |             |
| 23°C                                                     | 8.00                   | 14.0        | J                 |             |
| Multi-Axial Instrumented Impact Peak Force               |                        |             |                   | ISO 6603-2  |
| -30°C                                                    | 950                    | --          | N                 |             |
| 23°C                                                     | 1070                   | --          | N                 |             |
| Thermal                                                  | Dry                    | Conditioned | Unit              | Test Method |
| Deflection Temperature Under Load                        |                        |             |                   |             |

|                                   |         |             |          |              |
|-----------------------------------|---------|-------------|----------|--------------|
| 0.45 MPa, Unannealed,<br>39.9 mm  | 215     | --          | °C       | ASTM D648    |
| 0.45 MPa, Unannealed              | 215     | --          | °C       | ISO 75-2/B   |
| 1.8 MPa, Unannealed               | 200     | --          | °C       | ISO 75-2/A   |
| 1.8 MPa, Annealed, 3.99<br>mm     | 200     | --          | °C       | ASTM D648    |
| Vicat Softening<br>Temperature    |         |             |          |              |
| --                                | 200     | --          | °C       | ISO 306/B50  |
| --                                | > 200   | --          | °C       | ISO 306/B120 |
| Melting Temperature <sup>10</sup> | 222     | --          | °C       | ISO 11357-3  |
| CLTE                              |         |             |          | ISO 11359-2  |
| Flow : 23 to 55°C                 | 2.0E-5  | --          | cm/cm/°C |              |
| Transverse : 23 to 55°C           | 8.0E-5  | --          | cm/cm/°C |              |
| RTI Elec (1.50 mm)                | 130     | --          | °C       | UL 746       |
| RTI Imp                           |         |             |          | UL 746       |
| 0.830 mm                          | 95.0    | --          | °C       |              |
| 1.50 mm                           | 95.0    | --          | °C       |              |
| RTI Str                           |         |             |          | UL 746       |
| 0.830 mm                          | 130     | --          | °C       |              |
| 1.50 mm                           | 130     | --          | °C       |              |
| Electrical                        | Dry     | Conditioned | Unit     | Test Method  |
| Surface Resistivity               | 1.0E+14 | 1.0E+12     | ohms     | IEC 60093    |
| Volume Resistivity (23°C)         | 1.0E+15 | 1.0E+12     | ohms·cm  | IEC 60093    |
| Electric Strength                 |         |             |          | IEC 60243-1  |
| 23°C, 1.00 mm                     | 40      | 35          | kV/mm    |              |
| 23°C, 3.00 mm                     | 40      | 35          | kV/mm    |              |
| Dielectric Constant               |         |             |          |              |
| 23°C, 50 Hz <sup>11</sup>         | 4.00    | 15.0        |          | IEC 60250    |
| 23°C, 1 MHz <sup>12</sup>         | 4.00    | 5.00        |          | IEC 60250    |
| 23°C, 100 Hz                      | 4.00    | 10.0        |          | IEC 60250    |
| Dissipation Factor                |         |             |          | IEC 60250    |
| 23°C, 50 Hz                       | 5.0E-3  | 0.50        |          |              |
| 23°C, 100 Hz                      | 5.0E-3  | 0.20        |          |              |
|                                   | 0.015   | 0.16        |          |              |
| 23°C, 1 MHz                       | 0.015   | 0.12        |          |              |
| Arc Resistance <sup>13</sup>      | --      | 76.0        | sec      | ASTM D495    |
| Comparative Tracking<br>Index     |         |             |          |              |
| Solution A                        | 600     | --          | V        | IEC 60112    |
| Solution B                        | 400     | --          | V        | IEC 60112    |
| --                                | --      | 400         | V        | ASTM D3638   |

| Flammability                           | Dry         | Conditioned | Unit        | Test Method    |
|----------------------------------------|-------------|-------------|-------------|----------------|
| Flame Rating                           |             |             |             | UL 94          |
| 0.830 mm                               | HB          | --          |             |                |
| 1.50 mm                                | HB          | --          |             |                |
| 1.60 mm                                | HB          | --          |             |                |
| 3.00 mm                                | HB          | --          |             |                |
| 3.20 mm                                | HB          | --          |             |                |
| Glow Wire Flammability Index (2.00 mm) | 600         | --          | °C          | IEC 60695-2-12 |
| Oxygen Index <sup>14</sup>             | 22          | --          | %           | ISO 4589-2     |
| Injection                              | Dry         | Unit        | Test Method |                |
| Drying Temperature - Dry Air Dryer     | 80.0        |             | °C          |                |
| Drying Time - Dry Air Dryer            | 2.0 to 6.0  |             | hr          |                |
| Processing (Melt) Temp                 | 270 to 290  |             | °C          |                |
| Mold Temperature                       | 80.0 to 120 |             | °C          |                |

#### NOTE

- 150x105x3mm, 80°C MT, 500 bar
- 150x105x3mm
- 150x105x3mm, 80°C MT, 500 bar
- 150x105x3mm
- 1.0 mm/min
- 2.0 mm/min
- 2.0 mm/min
- 2 mm/min
- US-FMVSS302
- 10°C/min
- Tinfoil Electrodes
- Tinfoil Electrodes
- Tungsten Electrodes
- Procedure A

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